

## MILAN SONKA, Ph.D.

---

### QUALIFICATIONS

- **M.S.** Electrical Engineering – Technical Cybernetics, Czech Technical University of Prague, Czechoslovakia, 1979
- **Ph.D.** Technical Cybernetics – Digital Image Analysis, Czech Technical University of Prague, Czechoslovakia, 1983, Thesis title: *Texture Recognition*

### EMPLOYMENT

- College of Engineering, The University of Iowa  
2000 – now, Professor of Electrical and Computer Engineering  
2014 – now, Lowell C. Battershell Chair in Biomedical Imaging  
2019 – now, Director, Iowa Initiative for Artificial Intelligence, University-wide position  
2014 – 2019, Associate Dean for Graduate Programs, Research, and Faculty, College of Engineering  
2008 – 2014, Chair, Department of Electrical and Computer Engineering  
1994 – 2000, Associate Professor of Electrical and Computer Engineering  
1993 – 1994, Visiting Associate Professor  
1990 – 1993, Visiting Assistant Professor
- Iowa Institute for Biomedical Imaging  
2016 – now, Co-director  
2010 – 2016, Director  
2007 – 2010, Founding Co-director
- Iowa Initiative for Artificial Intelligence  
2019 – now, Founding Director
- Secondary appointments at the University of Iowa  
2001 – now, Professor of Applied Mathematical and Computational Sciences  
2006 – now, Professor of Ophthalmology and Visual Sciences  
2006 – now, Professor of Radiation Oncology  
2015 – now, Professor of Biomedical Engineering
- Department of Control Engineering, Czech Technical University of Prague  
1984–1990, Assistant Professor

## HIGHLIGHTS

- **IEEE Fellow** – 2002; for contributions to medical image analysis and computer vision.
- **Fellow, American Institute for Medical and Biological Engineering** – 2006.
- **Fellow, Medical Image Computing and Computer-Aided Intervention Society** – 2014.
- **Fulbright Specialist** – 2020.
- **IEEE EMBS Distinguished Service Award** “For contributions to biomedical imaging research and education” – 2020
- **Fellow, National Academy of Inventors** – 2021
- **Iowa Board of Regents Award for Faculty Excellence** – 2011, the highest award from the State Board of Regents of Iowa for “outstanding accomplishments and contributions to the Regents institutions as well as the State of Iowa”.
- **Editor-in-Chief, IEEE Transactions on Medical Imaging**, 2009 – 2014.

## RESEARCH

- **Research efforts** are directed at developing clinically applicable knowledge-based methods for semi-automated and automated analysis of medical images. Over the last several years, the following methods were developed and validated, and in some cases their main ideas adopted by other researchers in the field or resulted in commercialized FDA-approved products used in clinical research and/or clinical care.
- **Foundational Research in Quantitative Medical Image Analysis, Medical Image Segmentation:**
  - Long-term interdisciplinary research yielded a graph-based approach for simultaneous segmentation of multiple objects and surfaces (LOGISMOS), employing new optimal 3-D, 4-D, ..., n-D graph-search method for detection of multiple mutually interacting surfaces in n-D image data and producing results in low-polynomial time. Clinical utility of LOGISMOS was further extended by a novel “Just-Enough-Interaction” paradigm for efficient quantitative medical image analysis. The method’s newest variant Deep LOGISMOS combines conventional and AI approaches to image analysis, combining advantages of both approaches.
  - Graph-based determination of cortical thickness in human brain MR images.
  - Segmentation of airway trees from 3D CT images. Three generations of methods were developed with increasing performance. The first-generation approach used decision rules, the second was based on manually-designed fuzzy rules and fuzzy membership functions, the third generation was automatically designing the fuzzy rules and membership functions from examples. Segmentation and characterization of lung nodules from pulmonary CT. Pulmonary tissue characterization from CT.
  - Quantitative analysis of ovarian ultrasound images.
  - Automated design of border detection criteria from manually traced border examples, a self-learning border property identification method that minimizes the need for manual design of border detection functions.
  - Computer-assisted methods for surgical planning of liver tumor resection, automated segmentation of the lower thoracic cavity, liver, liver tumor, and identification of the vascular trees, interactive surgical planning and quantitative outcome assessment tools to assist in the clinical decision making process.
  - Novel 3D image analysis techniques, including parallel 3D skeletonization, 3D smoothing without shrinkage, and 3D edge detection in anisotropic image data.

## **• Quantitative Assessment of Cardiovascular Disease:**

- Coronary border detection, the first method reported in literature that determines both coronary borders simultaneously. Introduction of this idea improved the segmentation success rate in clinical angiograms four-fold.
- Endothelial function quantification from ultrasound imaging, the only method that uses patient-specific border detection quality control to automatically identify and discard non-reliable measurements, successfully commercialized and used in more than 400 leading cardiovascular research laboratories around the world.
- Methodology for separation of arteries and veins, vessel labeling, and quantification of disease in image data sets from contrast-enhanced magnetic resonance angiography.
- Development of a 2D+time Active Appearance Motion Model (AAMM) representing cardiac cycle dynamics in combination with the shape and specific imaging modality appearance of the heart, applied to clinical MR and echocardiography image sequence analysis in clinical setting. Development of a 3D Active Appearance Motion and 3D Spatial Model with application to volumetric cardiac MR and transthoracic echo image data.
- Methods for 3D and 4D analysis of aortic MR and CT datasets, methods for wall thickness and plaque type analysis from X-ray CT Angiography data, aortic disease progression.
- Methods for simultaneous detection of multiple surfaces in intracoronary IVUS and OCT image pullbacks, machine learning methods for prediction of vulnerable plaque types in coronary IVUS, methods for assessment of thin-cap fibroatheroma from IVUS and OCT.
- Methods for machine-learning/deep-learning analysis of heart-transplant OCT and biomarkers data for prediction of cardiac allograft vasculopathy complications.

## **• Pulmonary Image Analysis:**

- Developed approaches for 3D segmentation of pulmonary airway trees.
- Analysis of airway wall in complete intrathoracic trees and across bifurcations.
- Identification of pulmonary fissures, contributing to segmentation of lung lobes.
- Separation of arteries and veins in pulmonary vasculature.
- Automated labeling of airway tree segments according to the international nomenclature.

## **• Ophthalmic Image Analysis:**

- Multi-layer segmentation of 3D retinal OCT images – up to 13 layers reliably segmented for the macular as well as peripapillary OCT scans.
- Segmentation of SEADs – symptomatic exudate-associated derangements of the retina in presence of age-related macular degeneration and diabetic macular edema.
- Early detection of retinal changes on diabetic retinopathy.
- Image-guided therapy development for age-related macular degeneration.
- Image analysis of optic nerve head morphology for quantitative assessment of glaucoma.
- Structural assessment of visual function from passive 3D OCT imaging bypassing active tests of visual function.

## **• Orthopaedic Image Analysis:**

- 3D and 4D (longitudinal 3D) segmentation of bones and cartilages, morphologic analysis of bones and cartilages for all three knee-joint bones (tibia, femur, patella).

- Automated analysis of meniscal morphology from MR.
- Osteophyte image analysis.

- **Artificial Intelligence and Machine Learning (AI/ML):**

- Development of new and employing established AI/ML techniques to answer a broad spectrum of data-driven research questions.
- ML-based prediction of disease outcomes.
- ML-based learning of image analysis method parameters from examples.
- Modeling teaching/learning processes to develop generally-applicable AI-augmented education paradigms and test them in K-20 environments.

## BOOKS

- **Image Processing, Analysis, and Machine Vision**

- Four (4) editions of a successful comprehensive graduate-level text *Image Processing, Analysis, and Machine Vision* (Sonka, Hlavac, Boyle), 1st edition 1993, 2nd edition 1998, 3rd edition 2007, 4th edition 2014.

- **Handbook of Medical Imaging**

- Edited (with J. M. Fitzpatrick, Vanderbilt University) a volume entitled *Medical Image Processing and Analysis* of a 3-volume Handbook of Medical Imaging, published by SPIE in 2000. This Handbook has become a defining publication of the rapidly developing field. An excellent group of authors was attracted to work on this comprehensive project. Our 1250-page volume contains 14 chapters.

## EDUCATIONAL ACTIVITIES

- 19 Ph.D. students and 18 M.S. students successfully graduated.
- Research-mentored 6 visiting faculty members, 22 postdoctoral associates and 10 international graduate students.
- In 1996, developed a Quantitative Imaging Electronic Classroom (QIEC), a specialized facility for collaborative interactive image systems engineering instruction, funded by a series of grants by Hewlett Packard. This teaching facility became the primary place for hands-on engineering instruction, far exceeding the area of image processing.
- To support image systems engineering instruction in QIEC, developed a new lecture strategy consisting of interactive teaching approach of theory–example–experiment. Applied this strategy to teaching three new or modified image processing courses offered in the computer classroom. This (at that time – 1996) pioneering educational development was well received by students and is reported in IEEE Transactions on Education.
- Courses Taught:
  - Core courses
    - \* 57:012, Linear System Analysis
    - \* 57:017, Computers in Engineering
    - \* 57:008, Electronic Circuits

- Advanced undergraduate and graduate courses
  - \* 55:042, Signals and Systems
  - \* 55:060, Control Systems
  - \* 55:148, Digital Image Processing
  - \* 55:247, Image Analysis and Understanding
  - \* 55:248, Advanced Image Processing
  - \* 55:295, Pattern Recognition / Machine Learning

## GRANTS

- **1996 – 1998**, principal investigator, American Heart Association – Iowa Affiliate: Automated 3D analysis of plaque morphology and composition in IVUS images, \$45,000.
- **1996–1998**, principal investigator, NSF: Automated Learning in Knowledge-Based Image Analysis, \$50,000.
- **1996**, principal investigator (MPI), Hewlett Packard Co., Image Systems Engineering curriculum development, \$890,000.
- **1997**, principal investigator, Hewlett Packard Co., Image Systems Engineering curriculum development, \$110,000.
- **1998**, principal investigator, Hewlett Packard Co., Image Systems Engineering, \$462,000.
- **1997 – 1998**, principal investigator, Bowman Gray School of Medicine, Automated analysis of brachial ultrasound, \$10,000.
- **1997 – 1998**, principal investigator, Boston Scientific Corporation, Geometrically Accurate 3D Reconstruction of Vessel Morphology, \$44,637.
- **1998 – 1999**, co-investigator, Whitaker Foundation, A Collaborative Educational Environment for Functional Cardiovascular Image Analysis, \$350,000.
- **1998 – 2000**, principal investigator, American Heart Association, Iowa Affiliate, Automated Analysis of Echo Images: Imaging of the Left Ventricle from the Right Ventricle using 2D and 3D Techniques, \$55,000.
- **1998 – 1999**, principal investigator, The University of Iowa, Quantitative Medical Imaging: Collaborative Research between the University of Iowa and the Iowa State University, \$20,000.
- **1998 – 1999**, principal investigator (MPI), The University of Iowa, Assessing the Malignant Potential of Cancers by Magnetic Resonance Imaging of Microcirculation, \$30,000.
- **1998 – 2003**, co-investigator responsible for image analysis, NIH, Arterial Endothelial Function - An Epidemiologic Study, \$3,404,221, image analysis part \$58,000/year.
- **1998 – 1999**, principal investigator, EPIX Medical, Boston MA, Highly Automated Segmentation of Venous and Arterial Trees from Three-Dimensional MR Angiography, \$93,600.
- **1999 – 2004**, principal investigator, NIH, 3D & 4D Coronary Hemodynamics and Local Atherosclerosis, \$1,036,557.
- **1999–2002**, principal investigator of Univ. of Iowa subcontract, Astra Medical - subcontract for Harvard Medical School, Pilot Study of Candesartan to Reduce Coronary In-Stent Restenosis and Progression of Atherosclerosis \$30,000, (Complete grant \$96,000, P. Stone PI at Harvard).

- **1999–2001**, principal investigator, University Hospital Bern, Switzerland, 3D Assessment of Coronary Geometry using Non-Sheathed Catheters, \$30,000.
- **2000–2005**, co-investigator, NIH, Image and Model-Based Analysis of Lung Diseases, \$7,044,907, Hoffman PI, Sonka’s image analysis part \$275,000.
- **1999 – 2003**, principal investigator (MPI), NIH, Vascular Analysis Workstation, \$840,000.
- **2002 – 2005**, co-investigator, NIH, Large Scale Digital Cell Analysis System, \$1,583,273, Mackey PI, Sonka’s image analysis part \$210,000.
- **2003 – 2008**, principal investigator, NIH, Highly Automated Analysis of 4-D Cardiovascular MR Data, \$1,470,000.
- **2004 – 2009**, co-investigator responsible for image analysis, NIH, Arterial Endothelial Function - An Epidemiologic Study, \$3,700,000, Sonka’s image analysis part \$416,000.
- **2004 – 2008**, co-investigator responsible for image analysis, NIH, Regulation of Coronary Vessel Assembly and Growth, \$1,000,000, Sonka’s image analysis part \$80,000.
- **2004 – 2009**, co-investigator responsible for image analysis, NIH, Epidemiology of Carotid Artery Atherosclerosis in Youth, \$3,200,000, Sonka’s image analysis part \$250,000.
- **2003 – 2005**, principal investigator, Philips Medical Systems, Quantitative Analysis of Coronary CT images, \$160,000.
- **2005**, principal investigator (MPI), NIH – conference organization grant, Information Processing in Medical Imaging 2005, \$10,000.
- **2005**, principal investigator (MPI), Whitaker Foundation – conference organization grant, Information Processing in Medical Imaging 2005, \$10,000.
- **2005 – 2009**, principal investigator (MPI), NIH, 3D Analysis of MR-imaged Articular Cartilage, \$900,000.
- **2005 – 2010**, principal investigator, NIH, 3-D and 4-D Coronary Hemodynamics and Local Atherosclerosis, \$1,350,000.
- **2006 – 2009**, principal investigator, NIH, Graph-Based Medical Image Segmentation in 3D and 4D, \$1,070,000.
- **2006–2010**, co-investigator, NIH, Image and Model-Based Analysis of Lung Diseases, \$10,000,000, Hoffman PI, Sonka’s image analysis part \$375,000.
- **2006 – 2007**, principal investigator, Philips Medical Systems, Quantitative Analysis of Vascular CT images, \$118,000.
- **2007 – 2012**, co-investigator, NIH, University of Iowa Clinical and Translational Science Award, \$33,800,000, Hunninghake PI.
- **2007 – 2008**, principal investigator (MPI), Zeiss Meditec, Quantitative Analysis of Optic Nerve Head from 3D OCT Images, \$80,000.
- **2009 – 2012**, principal investigator (MPI), NIH, Focal Structure-Function Relationships in Macular Layers from 3D Spectral OCT, \$1,100,000.
- **2009 – 2011**, co-investigator, NIH, Expediting Patient-Specific Assessment of Chronic Contact Stress Exposure, \$210,000, Anderson PI.

- **2009 – 2014**, principal investigator, NIH, Graph-Based Medical Image Segmentation in 3D and 4D - Phase II, \$1,530,000.
- **2009 – 2014**, co-investigator, Veterans Administration, VA Center of Excellence for the Prevention and Treatment of Visual Loss, \$5,500,000, Kardon PI.
- **2010 – 2016**, principal investigator (MPI), NIH, Retinal Therapy Guided by 3-D OCT Image Analysis, \$2,800,000
- **2010 – 2015**, principal investigator (MPI), NIH, Quantitative Imaging to Assess Response in Cancer Therapy Trials, \$2,900,000.
- **2012 – 2015**, co-investigator, NIH, Expanding Objective CT-based Phenotyping to Lungs with Enhanced Radiodensities, \$1,100,000. Beichel PI.
- **2012 – 2016**, principal investigator (MPI), NIH, Focal Structure-Function Relationships in Macular Layers from 3D Spectral OCT, \$1,500,000.
- **2013 – 2018**, principal investigator of subcontract, Christian Doppler Society Austria. OPTIMA – Approaches for large-throughput analyses of retinal AMD-OCT, \$2,500,000 – Iowa part \$600,000.
- **2013 – 2018**, co-investigator of subcontract, NIH, Quantitative Image Informatics for Cancer Research (QIICR), \$4,000,000 – Iowa part \$350,000.
- **2014 – 2019**, principal investigator, NIH, Graph-Based Medical Image Segmentation in 3D and 4D - Phase III, \$1,600,000.
- **2016 – 2019**, principal investigator of subcontract from Charles University Prague, Ministry of Health Czech Republic, Impact of lipids on atherosclerosis assessed by IVUS, \$41,000.
- **2016 – 2019**, principal investigator of subcontract from Institute of Clinical and Experimental Medicine (IKEM), Ministry of Health Czech Republic, Assessment of cardiac allograft vasculopathy by OCT, \$45,000.
- **2015 – 2020**, principal investigator (MPI), NIH, Quantitative Imaging to Assess Response in Cancer Therapy Trials - Phase II (continuously funded since 2010), \$3,000,000.
- **2019 – 2020**, principal investigator, Lenovo, Preventing Future Heart Attacks using AI: Deep Learning-based Identification of Vulnerable Plaque in Coronary Arteries in Vivo, \$50,000 + \$80,000 hardware award.
- **2019 – 2024**, principal investigator of subcontract from University of Virginia/ NIH — Id3 and VSMC in Murine and Human Atherosclerosis, \$429,000.
- **2019 – 2023**, principal investigator, NIH, Deep LOGISMOS — Graph-Based Medical Image Segmentation in 3D and 4D - Phase IV (continuously funded since 2006), \$1,820,000.
- **2020 – 2023**, principal investigator of subcontract from Regeneron/Neox, Image analysis part of clinical trial: Efficacy and Safety of Alirocumab to Prevent Early Cardiac Allograft Vasculopathy in Recent Heart Transplant Recipients, \$223,000.
- **2021 – 2022**, principal investigator, Iowa OVPR, Iowa Initiative for Scientific Imaging and Conservation of Cultural Artifacts (IISICCA), \$150,000.
- **2022-2028**, co-investigator, NIH – Iowa Summer Institute for Research Education in Biostatistics and Data Science (ISIB), \$1,280,000.

- **2022 – 2023**, principal investigator, NIH, Deep LOGISMOS: Hippocampal Plasticity in Alzheimer’s Disease, \$370,000.
- **2023 – 2027**, principal investigator (MPI), NIH, MMP-9 based immune-driven mechanisms of neo-vascular AMD, \$2,161,000.

## PROFESSIONAL ACTIVITIES

- Editor in Chief, IEEE Transactions on Medical Imaging, 2009–2014.
- Associate Editor, IEEE Transactions on Medical Imaging, 1995–2008.
- Editorial Board member, The International Journal of Cardiac Imaging, 1998 - 2009.
- Associate Editor, Medical Image Analysis, 2001 - now.
- Boerhaave Visiting Professor at the Leiden University, The Netherlands (prestigious named visiting professorship, one invitation per year) May–June 1999.
- SPIE International Symposium on Medical Imaging, Symposium Chair, 2006–2008.
- SPIE International Symposium on Medical Imaging – Image Processing, Conference Chair, 2001–2004.
- Information Processing in Medical Imaging, Conference Chair, 2005.
- IEEE International Symposium on Medical Imaging (ISBI), General Chair, 2016.
- Keynote speaker
  1. International Conference Medical Imaging - Image Processing, 1998
  2. Computer Assisted Fundus Image Analysis (CAFIA) 2000
  3. International Conference Biosignal 2000
  4. Computer Assisted Radiology and Surgery – International Symposium on Cardiovascular Imaging 2001
  5. Computer Assisted Fundus Image Analysis (CAFIA) 2001
  6. 25th Anniversary Symposium LKEB – Clinical and Experimental Image Analysis 2002
  7. Southwest Symposium on Image Analysis and Interpretation 2004
  8. Computer-Based Medical Systems 2004
  9. MICCAI Intravascular Ultrasound workshop 2006
  10. IEEE International Symposium on Biomedical Imaging 2010
  11. The Dutch R&D-Landscape of Biomedical Imaging 2010
  12. MICCAI International Workshop on Machine Learning in Medical Imaging 2010
  13. Dutch NWO Governmental Workshop Investing in Technology for Sustainable Healthcare 2010
  14. SPIE Medical Imaging - Image Processing 2011
  15. IAPR Graph-based Representations in Pattern Recognition 2011
  16. IEEE-EMBS International Conference on Biomedical and Health Informatics 2012
  17. MMBIA - Mathematical Methods in Biomedical Image Analysis 2012
  18. EuRETINA - Quantitative Analysis of 3-D Retinal OCT 2013
  19. SCIA - Workshop on Farm Animal and Food Quality Imaging 2013

20. MIUA - Medical Image Understanding & Analysis 2013
  21. ISCA - International Symposium on Computational Anatomy 2014
  22. BHI - International Conference on Biomedical and Health Informatics 2014
  23. IEEE - International Symposium on Biomedical Imaging 2016
  24. World Conference on Biomedical Engineering 2018
  25. International Congress on Heart & Cardiology 2019
  26. 2nd International Forum on Artificial Intelligence in Ophthalmology 2022
  27. 3rd International Forum on Artificial Intelligence in Ophthalmology 2023
- Tutorials
    1. ISBI 2008 Paris, France – Segmentation of biomedical images
    2. IEEE International Summer School Ile Berder, France – Knowledge-based Approaches in Cardiovascular Image Analysis, 2008
    3. MICCAI 2010 Beijing, China – Graph Algorithmic Techniques for Biomedical Image Segmentation (with Wu and Garvin)
    4. Biomedical Image Analysis Summer School: Modalities, Methodologies & Clinical Research, Ecole Centrale Paris. Graph Algorithmic Techniques for Ophthalmic Image Analysis, 2012
  - Co-guest editor of Special Issue of Computer Vision and Image Understanding on Analysis of Volumetric Images, Dec. 1999; co-guest editor of Special Issue on Image Analysis in Drug Discovery and Clinical Trials, IEEE Transactions on Medical Imaging, October 2002; co-guest editor of Special Issue on Advances in Modality-Oriented Medical Image Processing, EURASIP Applied Signal Processing, 2002; co-guest editor of Special Issue on Pulmonary Imaging, IEEE Transactions on Medical Imaging, April 2006.
  - Institute of Electrical and Electronics Engineers, member 1994, senior member 2000, Fellow 2002; IEEE Image Systems working group coordinator, 1996 – 2001; International Association for Pattern Recognition, member 1992 – now; Joint IEEE Computer Society/ACM Task Force on the Year 2001 Model Curricula for Computing (CC-2001) - focus group on Computing at the Interface, member, 1999-2001.
  - Program committee member: SPIE Medical Imaging – Image Processing 1995–2004; Symposium on computer graphics, image processing, and vision SIBGRAP'98; Iowa Cardiovascular Symposium 1998; Information Processing in Medical Imaging IPMI 1999-now; Software Seminar SOFSEM'00. Track Co-chair, Radiographic Imaging track of the 20th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 1997 - 1998. International jury member – Cardiovascular Imaging Award of the 1998 International Symposium in Cardiovascular Imaging, Leiden, The Netherlands. Technical Program Co-Chair - IEEE Southwest Symposium on Image Analysis and Interpretation, Austin TX, April 2000.
  - 2005-2010, RSNA (Radiological Society of North America) Physics Program Committee.
  - Reviewing conference papers: International SPIE Conference Medical Imaging, International IMEKO Biosignal conference, International Conference Database and Expert Systems Applications, Conference Computer Analysis of Images and Patterns, IEEE/ECLA/IFIP International Conference on Architecture and Design Methods for Balanced Automation Systems, SIPGRAPI, IPMI, SSIAl, CVPR, MICCAI.
  - Reviewing book proposals: Chapman and Hall, IEEE Press, Prentice Hall, Springer Verlag.

- Reviewing journal papers: IEEE Transactions on Medical Imaging, IEEE Transactions on Biomedical Engineering, IEEE Transactions on Image Processing, IEEE Proceedings - Vision, Image and Signal Processing, Clinical Cardiology, The American Journal of Cardiology, Annals of Biomedical Engineering, Journal of Electronic Imaging, Academic Radiology, Graphical Models and Image Processing, Machine Vision and Applications, International Journal on Cardiac Imaging, IEEE Signal Processing Letters, Computer Vision – Image Understanding, Proceedings of the IEEE.
- Reviewing grant proposals: NSF Knowledge Models and Cognitive Systems panel reviewer; NSF Neuroscience, Computer and Mathematical Sciences and Engineering; STW - Dutch Technology Foundation Applied Research; GACR - Grant Agency of the Czech Republic; NSE-RCC - Natural Sciences and Engineering, Research Council of Canada; NATO - North Atlantic Treaty Organization, Scientific and Environmental Affairs Division; GAAS - Grant Agency of the Czech Academy of Sciences; NOW - Netherlands Organization for Scientific Research; U.S. Civilian Research and Development Foundation (CRDF).
- Reviewing research conducted by the computing departments (DTU Compute) of the Technical University of Denmark - member of a 5-person international panel.
- Student paper awards (supervised or co-supervised research)
  - IEEE EMBS 1992, 1993, 2 awards in 1997
  - SPIE Medical Imaging 1995, 1996, 1998, 1999
  - Information Processing in Medical Imaging IPMI'99
  - Michael B. Merickel Award for Best Student Paper at SPIE Medical Imaging 2002, 2007
  - Cornelius Dyke Award for “Artificial Intelligence Driven Differentiation of Glioblastoma, Metastatic Disease and CNS Lymphoma: A Comparison of Machine and Deep Learning Models,” AJNR 2023
- Visiting Professor at the University of Hawaii, January – February 2000.
- Visiting Professor at the Technical University of Graz, Austria, March – May 2000.
- Visiting Professor at the University of Bremen, Germany, June 2000.
- Visiting Professor at the University of Copenhagen, Denmark, October 2002.
- Visiting Professor at the University of Calgary, Canada, February 2003.
- Visiting Professor, Chinese Academy of Sciences, Beijing China, November 2010.
- Visiting Professor, Soochow University, Suzhou China, 2012.
- Visiting Professor, Soochow University, Suzhou China, 2013.
- Chinese Academy of Sciences Visiting Professorship for Senior international Scientists, 2014.
- Serving on Ph.D. committees at Chalmers University of Technology, Gothenburg, Sweden (June 1999); University of Leiden, Leiden, The Netherlands (October 1999); Technical University of Denmark, Denmark (December 2000); Technical University Graz (May 2005); ITU Copenhagen, Denmark (December 2006); University of Utrecht, the Netherlands (December 2006); Chalmers University of Technology, Gothenburg, Sweden (June 2008), ITU Copenhagen, Denmark (May 2012).
- Marquis Who's Who – Who's Who in Science and Engineering, listed, 1996-now.
- Marquis Who's Who in Medicine and Healthcare, listed, 2002-now.

- Marquis Who's Who in America, listed, 2005-now.
- International Professional of the Year 2005 - International Biographic Center, Cambridge, England.
- Outstanding Intellectuals of the 21st Century - listed, 2005-now.

## PATENTS

1. US Patent 6,148,095, Apparatus and method for determining three-dimensional representations of tortuous vessels. Inventors: G P M Prause and M Sonka.
2. US Patent 6,466,687, Method and apparatus for analyzing CT images to determine the presence of pulmonary tissue pathology. Inventors: R Uppaluri, T Mitsa, E A Hoffman, G McLennan, M Sonka.
3. US Patent 7,885,438, Methods and apparatuses for analyzing images. Inventors: R Uppaluri, T Mitsa, E A Hoffman, G McLennan, M Sonka.
4. US Patent 7,995,810, System and Methods for image segmentation in N-dimensional space. Inventors: K Li, X. Wu, D Z Chen, M. Sonka.
5. US Patent 8,073,210 Methods of smoothing segmented regions and related devices. Inventors: J M Reinhardt, M Sonka, G McLennan, E A Hoffman, S Ukil.
6. US Patent 8,155,403 Methods and devices for airway tree labeling and/or matching. Inventors: J Tschirren, M Sonka, J M Reinhardt, G McLennan, E A Hoffman.
7. US Patent 8,189,885 Apparatus and method for computing regional statistical distribution over a mean anatomic space. Inventors: P K Saha, M Sonka.
8. US Patent 8,358,819 B2, System and Methods for image segmentation in N-dimensional space (CIP-1). Inventors: X Wu, M Garvin, M D Abramoff, M Sonka.
9. US Patent 8,571,278, System and methods for multi-object multi-surface segmentation (CIP-2). Inventors: M Sonka, Y Yin, X Wu, X Zhang.
10. US Patent 9,545,196 Automated assessment of glaucoma loss from optical coherence tomography. Inventors: M D Abramoff, M Sonka.
11. US Patent 9,820,651, Methods and devices for labeling and/or matching. Inventors: J Tschirren, M Sonka, J Reinhardt, G McLennan, E Hoffman.
12. US Patent 9,924,867, Automated determination of arteriovenous ratio in images of blood vessels. Inventors: M D Abramoff, M Niemeijer, X Xu, M Sonka, J M Reinhardt.
13. US Patent 10,354,384, Automated assessment of glaucoma loss from optical coherence tomography. Inventors: M D Abramoff, M Sonka.
14. Japanese Patent JP-2014-504523, Automated determination of arteriovenous ratio in images of blood vessels. Inventors: M D Abramoff, M Niemeijer, X Xu, M Sonka, J M Reinhardt.
15. European Patent EP-2,665,406 B1, Automated determination of arteriovenous ratio in images of blood vessels. Inventors: M D Abramoff, M Niemeijer, X Xu, M Sonka, J M Reinhardt.
16. US Patent 11,638,522, Automated determination of arteriovenous ratio in images of blood vessels. Inventors: M D Abramoff, M Niemeijer, X Xu, M Sonka, J M Reinhardt.
17. US Patent 11,972,568, Automated assessment of glaucoma loss from optical coherence tomography. Inventors: M D Abramoff, M Sonka.

18. US Patent 12,035,971-B2, Automated determination of arteriovenous ratio in images of blood vessels.  
Inventors: M D Abramoff, M Niemeijer, X Xu, M Sonka, J M Reinhardt.

## INDUSTRIAL EXPERIENCE

- 1998–now – Founder, Medical Imaging Applications LLC (currently close to 100% market share in software tools for ultrasound-based assessment of endothelial function in research setting and clinical/epidemiologic trials). MIA-LLC markets FDA-approved software environment for carotid artery IMT and brachial artery FMD analysis, 3D analysis of articular cartilage in osteoarthritis imaged by MR, and Aortic CT/MR image analysis.
- 2001–now – Founder, VIDA Diagnostics Inc. (pulmonary imaging and image analysis, software suite of 3D pulmonary analysis tools for assessment of intrathoracic airway trees, vascular trees, lung lobes, pulmonary parenchyma, bronchoscopic navigation, computer-guided pulmonary interventions). VIDA markets FDA-approved software environment for quantitative pulmonary image analysis.
- 2002–2006 – Expert Witness in 2 medical image analysis – mammography patent cases.
- 2012–2013 – Expert Witness in an International Trade Commission smartphone patent case.
- 2015 – Expert witness in medical image analysis – Endoscopy case
- 2017–2019 – Expert witness in medical image analysis – 3D oral cavity mapping/visualization case
- 2019–2021 – Expert witness in medical image analysis – image-guided surgical planning case
- 2019–2024 – Expert witness in medical image analysis – ophthalmic 3D retinal analysis case
- 2019–2024 – Expert witness in medical image analysis – 3D dental analysis case
- **Small business research grants**
  - (1999–2000) NIH R43 – SBIR Phase I – Arterial Ultrasound Analysis Software Package (\$100k, Sonka Co-PI)
  - (2001–2003) NIH R44 – SBIR Phase II – Vascular Ultrasound Analysis Workstation (\$740k, Sonka Co-PI)
  - (2005–2006) NIH R43 – SBIR Phase I – 3D Analysis of MR-imaged Articular Cartilage (\$100k, Sonka Co-PI)
  - (2006–2008) NIH R44 – SBIR Phase II – 3D Analysis of MR-imaged Articular Cartilage (\$800k, Sonka Co-PI)

## Publications

- h-index Google Scholar = 84 (= 43 over past 5 years, Jan 2024)
- total number of citations > 47, 000 (> 15, 000 in past 5 years)
- i10 index = 313 (143 over past 5 years)
- h-index Web of Science = 58
- total number of citations > 17, 000

### 1.1 Books and monographs. (Limit to textbooks, research monographs, conference/symposium/congress proceedings, handbooks, etc., of which you are an author or an editor. Do not include articles or chapters in such media.)

1. Mařík, V., Hlaváč, V., Kalačová, M., Sonka, M.: Theory of Automatic Control, Problems – Teorie automatického řízení II, příklady. Skriptum ČVUT, Praha, 1987, 224 p. (in Czech).
2. Sonka, M., Hlaváč, V. eds.: Image Processing Methods and Devices I – Metody a prostředky zpracování vizuální informace '86. Sborník ČSVTS FEL ČVUT, Praha, 1986, 210 p. (in Czech).
3. Sonka, M., Hlaváč, V. eds.: Image Processing Methods and Devices II – Metody a prostředky zpracování vizuální informace '88 - II. Sborník ČSVTS FEL ČVUT, Praha, 1988, 220 p. (in Czech).
4. Hlaváč, V., Sonka, M.: Digital Image Processing – Digitální zpracování obrazové informace. Skriptum pro PGS, ČVUT, Praha, 1991, 68 p. (in Czech).
5. Hlavac, V., Sonka, M.: Computer Vision, Grada, Prague, 1993, 220 p. (in Czech).
6. Sonka, M., Hlavac, V. Boyle, R.: Image Processing, Analysis, and Machine Vision. Chapman and Hall Publishers, London – New York, 555 p., 1993.
7. Sonka, M., Hlavac, V. Boyle, R.: Image Processing, Analysis, and Machine Vision - 2nd Ed., PWS, Pacific Grove, CA, 800 p., 1998.
8. Sonka, M., Fitzpatrick, J.M. – editors: Handbook of Medical Imaging Volume 2 – Medical Image Processing and Analysis, SPIE, 1250 p., 2000.
9. Sonka, M., Hanson, K.M. – editors: Medical Imaging 2001 – Image Processing. Proceedings of SPIE, Vol. 4322 - parts 1,2,3; SPIE, Bellingham WA, 1998, 2001.
10. Sonka, M., Hlavac, V. Boyle, R.: Image Processing, Analysis, and Machine Vision - 2nd Ed., Posts & Telecom Press, Beijing, 2001, in English with Chinese preface.
11. Sonka, M., Fitzpatrick, J.M. – editors: Medical Imaging 2002 – Image Processing. Proceedings of SPIE, Vol. 4864 - parts 1,2,3; SPIE, Bellingham WA, 2002.
12. Sonka, M., Fitzpatrick, J.M. – editors: Medical Imaging 2003 – Image Processing. Proceedings of SPIE, Vol. 5032 - parts 1,2,3; SPIE, Bellingham WA, 2003.
13. Sonka, M., Hlavac, V. Boyle, R.: Image Processing, Analysis, and Machine Vision - 2nd Ed., Posts & Telecom Press, Beijing, 2003, in Chinese.
14. Fitzpatrick, J.M., Sonka, M. – editors: Medical Imaging 2004 – Image Processing. Proceedings of SPIE, Vol. 5370 - parts 1,2,3; SPIE, Bellingham WA, 2004.

15. Sonka, M., Kakadiaris, I.A., Kybic, J.: Computer Vision and Mathematical Methods in Medical and Biomedical Image Analysis, Lecture Notes in Computer Science Vol. 3117, Springer, Berlin, 2004.
16. Christensen, G.E., Sonka, M.: Information Processing in Medical Imaging, Lecture Notes in Computer Science Vol. 3565, Springer, Berlin, 2005.
17. Beichel R, Sonka M: Computer Vision Approaches to Medical Image Analysis (CVAMIA06). Second International Workshop at the 9th European Conference on Computer Vision, Graz, Lecture Notes in Computer Science, Springer, Volume 4241, 2006.
18. Sonka, M., Hlavac, V. Boyle, R.: Image Processing, Analysis, and Machine Vision - 3rd Ed., Thomson Engineering, Toronto, Canada, 850 p., 2008.
19. Zhang, D., Sonka, M. (Eds.): Medical Biometrics. Second International Conference, ICMB 2010, Hong Kong, China, June 28-30, Lecture Notes in Computer Science Vol. 6165, 2010.
20. Sonka, M., Hlavac, V. Boyle, R.: Image Processing, Analysis, and Machine Vision - 4th Ed., Cengage Learning, New York, 890 p., 2014.
21. Frangi, A., Prince, J., Sonka, M.: Medical Image Analysis, Elsevier, London UK, 609 p., 2024.

**1.2 Articles in technical journals with rigorous review procedures. (Include notes, discussions, letters to editor, etc., which are published in such journals and those articles or chapters in a meeting's printed record if that record utilizes review procedures equivalent to those for archive journals.)**

**1.2.1 Journal Papers**

1. Sonka, M.: Texture Primitive Extraction Methods – Metody extrakce primitiv z texturních obrazů. Lékař a technika, roč. 16, č.1, 1985 (in Czech).
2. Chalupa, V., Sonka, M.: Texture Recognition – Metody rozpoznávání textur a jejich využití. Automatizace, roč. 29, č. 7, 1985 (in Czech).
3. Chalupa, V., Sonka, M.: A Hybrid Texture Recognition Method – Hybridní metoda rozpoznávání textur. Automatizace, roč. 29, č. 12, 1985 (in Czech).
4. Hlaváč, V., Mařík, R., Sonka, M., Woska, J.: Digital Image Analysis system IMG – Programový systém IMG pro zpracování a vyhodnocení obrazové informace. Automatizace, č. 12, 1987 (in Czech).
5. Mařík, V., Jirků, P., Psutka, J., Sonka, M., Zdráhal, Z.: Artificial Intelligence – Umělá inteligence. Příloha Automatizace - vložka, 1988 (in Czech).
6. Sonka, M., Havel, J.jr.: Relaxation Edge Segmentation – Relaxační hranové segmentace Automatizace, roč. 32, č. 7, 1989, ss. 173-176 (in Czech).
7. Sonka, M.: A New Texture Recognition Method. Computers and Artificial Intelligence, Vol. 5, 1986, No.4, pp. 357–364.
8. Sonka, M., Wilbricht, C.J., Fleagle, S.R., Tadikonda, S.K., Winniford, M.D., Collins, S.M.: Simultaneous Detection of Both Coronary Borders. IEEE Transactions on Medical Imaging, Vol. 12, pp. 588–599, 1993.
9. Sonka, M., Winniford, M.D., Zhang, X., Collins, S.M.: Coronary Lumen Centerline Detection: Automated Analysis of Complex Coronary Angiograms. IEEE Transactions on Biomedical Engineering, Vol. 41, p. 520–528, June 1994.

10. Sonka, M.: Knowledge and Context in Image Understanding: Automatic Segmentation of MR Images of Human Brain in the Right and Left Hemispheres. *Lekar a Technika*, Vol. 25, pp. 123–128, December 1994.
11. Sonka, M., Winniford, M.D., Collins, S.M.: Robust Simultaneous Detection of Coronary Borders in Complex Images. *IEEE Transactions on Medical Imaging*, Vol. 14, pp. 151–161, March 1995.
12. Sonka, M., Zhang, X., Siebes, M., Bissing, M.S., DeJong, S.C., Collins, S.M., McKay, C.R.: Segmentation of Intravascular Ultrasound Images: A Knowledge-Based Approach. *IEEE Trans. Medical Imaging*, Vol. 14, No. 4, 1995.
13. Sonka, M., Park, W., Hoffman, E.A.: Rule-Based Detection of Intrathoracic Airway Trees, *IEEE Trans. Medical Imaging*, Vol. 15, 1996, pp. 314 – 326.
14. Sonka, M.: Intrathoracic Airway Tree Detection via Electron Beam Computed Tomography. *Lekar a Technika*, Vol. 27, pp. 125–130, 1996.
15. Sonka, M.: Quantitative Coronary Image Analysis: Angiography and Intravascular Ultrasound. *Lekar a Technika*, Vol. 27, pp. 75–82, 1996.
16. Sonka, M., Tadikonda, S.K., Collins, S.M.: Knowledge-Based Interpretation of MR Brain Images. *IEEE Trans. Medical Imaging*, Vol. 15, 1996, pp. 443 – 452.
17. Min Ma, C., Sonka, M.: A Fully Parallel 3D Thinning Algorithm and Its Applications. *Computer Vision and Image Understanding*. Vol. 64 (3), pp. 420–433., 1996.
18. Sonka, M., Reddy, G., Collins, S.M.: Adaptive Approach to Accurate Analysis of Small Diameter Vessels in Cineangiograms. *IEEE Transactions on Medical Images*. Vol. 16, February 1997.
19. Prause, G., DeJong, S., McKay, C.R., Sonka, M.: Towards a Geometrically Correct 3-D Reconstruction of Tortuous Coronary Arteries Based on Biplane Angiography and Intravascular Ultrasound. *International Journal of Cardiac Imaging*, pp. 451–462, 13(6), 1997.
20. Uppaluri, R., Mitsa, T., Sonka, M., Hoffman, E.A., McLennan, G.: Quantification of Pulmonary Emphysema from Lung Computed Tomography Images. *Amer. J. Resp. Critic. Care Med.*, 156(1), pp. 248-254, 1997
21. Sarty, G. E., Liang, W., Sonka, M., Pierson, R. A.: Semi-Automated Segmentation of Ovarian Follicular Ultrasound Images using a Knowledge-Based Algorithm, *Ultrasound in Medicine and Biology*, Vol. 24, pp. 27–42, 1998.
22. M. Sonka, W. Liang, R. M. Lauer: Flow-Mediated Dilatation in Brachial Arteries: Computer Analysis of Ultrasound Image Sequences, *CVD Prevention*, Vol. 1, pp. 147–155, 1998.
23. Zeng, C., Sonka, M.: Volume-Preserving Smoothing of Three-Dimensional Surfaces: Application to Intravascular Ultrasound. *Computers in Biomedical Research*, pp. 385–392, 1998.
24. Park, W., Hoffman, E.A., Sonka, M.: Segmentation of Intrathoracic Airway Trees: A Fuzzy Logic Approach. *IEEE Transactions on Medical Imaging*, Vol. 17, pp. 489–497, 1998.
25. Sonka, M., Dove, E.L., Collins, S.M.: Image Systems Engineering Education in an Electronic Classroom, *IEEE Transactions on Education*, Vol. 41, pp. 263-272, November 1998.
26. Duta, N., Sonka, M.: Segmentation and Interpretation of MR Brain Images: An Improved Active Shape Model. *IEEE Transactions on Medical Imaging*, Vol. 17, pp. 1049–1062, 1998.

27. Krivanek, A., Sonka, M.: Ovarian Ultrasound Image Analysis: Follicle Segmentation. *IEEE Transactions on Medical Imaging*, Vol. 17, pp. 935–944, 1998.
28. Zhang, X., McKay, C.R., Sonka, M.: Image Segmentation and Tissue Characterization in Intravascular Ultrasound. *IEEE Transactions on Medical Imaging*, Vol. 17, pp. 880–899, 1998.
29. Sonka, M.; Liang, W., Kanani, P., Allan, J., DeJong, S.C., Kerber, R.E., McKay, C.R.: Intracardiac Echocardiography: Automated Ventricular Border Detection, *Int. J. Cardiac Imag.*, Vol. 14, pp. 397–411, 1998.
30. M. Brejl, M. Sonka: Medical Image Segmentation: Automated Design of Border Detection Criteria from Examples, *J. of Electron. Imag.*, Vol. 8, pp. 54–64, 1999.
31. R. Uppaluri, E. A. Hoffman, M. Sonka, G. W. Hunninghake, and G. McLennan, Interstitial lung disease : A quantitative study using the adaptive multiple feature method. *Am. J. Respiratory and Critical Care Medicine*, pp. 519–525, Vol. 159, 1999.
32. A. Wahle, G. P. M. Prause, C. von Birgelen, R. Erbel, M. Sonka: Fusion of Angiography and Intravascular Ultrasound In Vivo: Establishing the Absolute 3D Frame Orientation, *IEEE Transactions on Biomedical Engineering*, special issue on Biomedical Data Fusion, pp. 1176–1180, Vol. 46, 1999.
33. R. Uppaluri, E. A. Hoffman, M. Sonka, P. G. Hartley, G. W. Hunninghake, and G. McLennan, Computer recognition of regional lung disease patterns. *Am. J. Respiratory and Critical Care Medicine*, pp. 648–664, Vol. 160, 1999.
34. A. Wahle, G. P. M. Prause, S. C. DeJong, M. Sonka, Geometrically Correct 3-D Reconstruction of Intravascular Ultrasound Images by Fusion with Biplane Angiography – Methods and Validation. *IEEE Transactions on Medical Imaging*, pp. 686–699, Vol. 18, 1999.
35. M. Brejl and M. Sonka: Directional 3D Edge Detection in Anisotropic Data: Detector Design and Performance Assessment. *Computer Vision and Image Understanding*, special issue on Analysis of Volumetric Images, pp. 84–110, February 2000.
36. K. R. Hoffman, A. Wahle, C. Barakat, J. Sklansky, M. Sonka: Biplane X-ray Angiograms, Intravascular Ultrasound, and 3-D Visualization of Coronary Vessels, *Int. J. Cardiovasc. Imag.*, pp. 495–512, December 1999.
37. A. Goshtasby, M. Sonka, J.K. Udupa: Analysis of Volumetric Images: Introduction (editorial). *Computer Vision and Image Understanding*, special issue on Analysis of Volumetric Images, pp. 79–83, February 2000.
38. B. Lelieveldt, M. Sonka, L. Bolinger, T. Scholz, H. Kayser, R. van der Geest, J.H.C. Reiber: Anatomical Modeling with Fuzzy Implicit Surface Templates: Application to Automated Localization of the Heart and Lungs in Thoracic MR Volumes. *Computer Vision – Image Understanding*, pp. 1–20, Vol. 80, 2000.
39. Park, W., Hoffman, E.A., Sonka, M.: Segmentation of Intrathoracic Airway Trees: A Fuzzy Logic Approach. (Reprint of *IEEE Transactions on Medical Imaging*, Vol. 17, pp. 489–497, 1998.) *IMIA 2000 Yearbook of Medical Informatics*, 311–319, 2000.
40. M. Brejl and M. Sonka: Object Localization and Border Detection Criteria Design in Edge-Based Image Segmentation: Automated Learning from Examples, *IEEE Transactions on Medical Imaging*, Vol. 19, pp. 973–985, 2000.

41. R M Stefancik and M Sonka: Highly Automated Segmentation of Arterial and Venous Trees from Three-Dimensional MR Angiography, *International Journal of Cardiovascular Imaging*, Vol. 17, pp. 37–47, 2001.
42. S. C. Mitchell, B. P. F. Lelieveldt, R. J. van der Geest, J. G. Bosch, J. H. C. Reiber, M. Sonka: Multistage Hybrid Active Appearance Model Matching: Segmentation of Left and Right Ventricles in Cardiac MR Images, *IEEE Transactions on Medical Imaging*, Vol. 20, pp. 415–423, 2001.
43. J. Tschirren, R.M. Lauer, M. Sonka: Automated Analysis of Doppler Ultrasound Velocity Flow Diagrams, *IEEE Transactions on Medical Imaging*, Vol. 20, pp. 1422-1425, 2001.
44. J. G. Bosch, S. C. Mitchell, B. P. F. Lelieveldt, F. Nijland, O. Kamp, M. Sonka, J. H. C. Reiber: Automatic segmentation of echocardiographic sequences by active appearance models, *IEEE Transactions on Medical Imaging*, Vol. 21. pp. 1374–1383, 2002.
45. S. C. Mitchell, J. G. Bosch, B. P. F. Lelieveldt, R. J. van der Geest, J. H. C. Reiber, M. Sonka: 3-D Active Appearance Models: Segmentation of Cardiac MR and Ultrasound Images, *IEEE Transactions on Medical Imaging*, Vol. 21, pp. 1167–1178, 2002.
46. M. Sonka, W. Liang, R. M. Lauer: Automated Analysis of Brachial Ultrasound Image Sequences: Early Detection of Cardiovascular Disease via Surrogates of Endothelial Function, *IEEE Transactions on Medical Imaging*, Vol. 21, pp. 1271–1279, 2002.
47. M. Sonka, M. Grunkin: Image Processing and Analysis in Drug Discovery and Clinical Trials – Editorial, *IEEE Transactions on Medical Imaging*, Vol. 21, pp. 1209–1211, 2002.
48. A. Bornik, R. Beichel, B. Reitingner, F. Leberl, G. Gotschuli, E. Sorantin, M. Sonka: Computer-aided liver surgery planning based on augmented reality techniques, *Telematik*, No. 4, pp. 22–24, 2002.
49. M. Sonka: Rapid and Accurate LV Surface Generation from 3D Echocardiography by a Catalog-based Method – Editorial, *International Journal of Cardiovascular Imaging*, Vol. 19, pp. 19–21, 2003.
50. F. Yang, G. A. Holzapfel, C. Schulze-Bauer, R. Stollberger, D. Thedens, L. Bolinger, A. Stolpen, M. Sonka, Segmentation of Wall and Plaque in In-Vitro Vascular MR Images, *Int J. Cardiovasc Imag*, Vol. 19, p. 419-428, 2003.
51. R. Medina, A. Wahle, M. E. Olszewski, M. Sonka, Accurate Quantification of Plaque Volume in Coronary Arteries, *Int J. Cardiovasc Imag*, Vol. 19, pp. 301-311, 2003.
52. A. Wahle, J. J. Lopez, E. C. Pennington, S. L. Meeks, K. C. Braddy, J. M. Fox, T. M. H. Brennan, J. M. Buatti, J. D. Rossen, M. Sonka. Effects of vessel geometry and catheter position on dose delivery in intracoronary brachytherapy. *IEEE Transactions on Biomedical Engineering*, Vol. 50, pp. 1286-1295, 2003.
53. Coskun A U, Yeghiazarians Y, Kinlay S, Clark M E, Ilegbusi O J, Wahle A, Sonka M, Popma J J, Kuntz R E, Feldman C L, Stone P H: Reproducibility of Coronary Lumen, Plaque, and Vessel Wall Reconstruction and of Endothelial Shear Stress Measurements In-Vivo in Humans. *Catheterization and Cardiovascular Interventions*, Vol. 60, Number 1, Page 67-78, 2003.
54. Stone P H, Coskun A U, Kinlay S, Clark M E, Sonka M, Wahle A, Ilegbusi O J, Yeghiazarians Y, Popma J J, Orav J, Kuntz R E, Feldman C L: Effect of Endothelial Shear Stress on the Progression of Coronary Artery Disease, Vascular Remodeling, and In-stent Restenosis in Man; In-Vivo 6-Month Follow-up Study. *Circulation* Volume 108, Number 4, Page 438-444, 2003.
55. J. Jan, M. Sonka, I. Provaznik: Modality-Oriented Medical Image Processing and Analysis (Editorial), *EURASIP Journal on Applied Signal Processing*, Vol. 5, p. 403-404, 2003.

56. E. A. Hoffman, J. M. Reinhardt, M. Sonka, B. A. Simon, J. Guo, O. Saba, D. Chon, S. Samrah, H. Shikata, J. Tschirren, K. Palagyi, K. C. Beck, G. McLennan: Characterization of the Interstitial Lung Diseases via Density-Based and Texture-Based Analysis of Computed Tomography Images of Lung Structure and Function, *Academic Radiology*; Vol. 10:p. 1104-1118, 2003.
57. M. A. Mackey, K. R. Anderson, L. E. Bresnahan, F. E. Domann, G. Gallardo, F. Ianzini, E. A. Kosmacek, Y. Li, M. Sonka, D. R. Spitz, Y. Sun, L. Wang, F. Yang. "The Large Scale Digital Cell Analysis System: A Unique Tool for the Study of Molecular and Cellular Phenomena in Living Cell Populations". *Molecular Imaging*, 2003, 2, 226.
58. M. A. Mackey, K. R. Anderson, L. E. Bresnahan, F. Ianzini, Y. Li, M. Sonka, L. Wang. Analysis of Cell Motility in Human Brain Tumor Cells using the Large Scale Digital Cell Analysis System. *Molecular Imaging*, 2, p. 269-270, 2003.
59. R.J. van der Geest, B.P.F. Lelieveldt, E. Angelie, M. Danilouchkine, M. Sonka, J.H.C. Reiber, Evaluation of a new method for automated detection of left ventricular contours in time series of Magnetic Resonance Images using an Active Appearance Motion Model, *Journal of Cardiovascular Magnetic Resonance*, vol 6(3), p. 609-617, 2004.
60. A. Wahle, M. E. Olszewski, M. Sonka: Interactive Virtual Endoscopy in Coronary Arteries based on Multi-Modality Fusion, *IEEE Transactions on Medical Imaging*, Vol. 23, p. 1391–1403, 2004.
61. S. D. Ramaswamy, S. C. Vigmostad, A. Wahle, Y. G. Lai, M. E. Olszewski, K. C. Braddy, T. M. H. Brennan, J. D. Rossen, M. Sonka, K. B. Chandran: Fluid Dynamic Analysis in a Human Left Anterior Descending Coronary Artery with Arterial Motion, *Annals of Biomedical Engineering*, 32(12), p. 1628–1641, 2004.
62. Hoffman EA, Clough AV, Christensen GE, Lin CL, McLennan G, Reinhardt JM, Simon BA, Sonka M, Tawhai MH, van Beek EJ, et al. The comprehensive imaging-based analysis of the lung: A forum for team science. *Acad Radiol* 2004;11:1370-1380.
63. Suter M, Tschirren J, Reinhardt J, Sonka M, Hoffman E, Higgins W, McLennan G. Evaluation of the human airway with multi-detector x-ray-computed tomography and optical imaging. *Physiological Measurement*. 25(4):837-47, 2004 Aug.
64. S Ge, L Bu, H Zhang, E Schelbert, M Disterhoft, X Li, X Li, D Sahn, A Stolpen, M Sonka: A Real-time 3-dimensional Digital Doppler Method for Measurement of Flow Rate and Volume Through Mitral Valve in Children: A Validation Study Compared with Magnetic Resonance Imaging. *J Am Soc Echocardiogr* 2005;18:1-7.
65. Tschirren, J.; Hoffman, E.A.; McLennan, G.; Sonka, M.: Intrathoracic airway trees: segmentation and airway morphology analysis from low-dose CT scans, *IEEE Transactions on Medical Imaging*, Volume 24, Issue 12, Dec. 2005, Pages:1529 - 1539.
66. Tschirren, J.; McLennan, G.; Palagyi, K.; Hoffman, E.A.; Sonka, M.: Matching and anatomical labeling of human airway tree, *IEEE Transactions on Medical Imaging*, Volume 24, Issue 12, Dec. 2005, Pages:1540 - 1547.
67. Beichel, R.; Bischof, H.; Leberl, F.; Sonka, M.: Robust active appearance models and their application to medical image analysis, *IEEE Transactions on Medical Imaging*, Volume 24, Issue 9, Sept. 2005, Pages:1151 - 1169.
68. Bosch JG, Nijland F, Mitchell SC, Lelieveldt BPF, Kamp O, Reiber JHC, Sonka M: Computer-aided diagnosis via model-based shape analysis: Automated classification of wall motion abnormalities in echocardiograms. *Academic Radiology* - March 2005 (Vol. 12, Issue 3, Pages 358-367).

69. Uzumcu, M.; van der Geest, R, Sonka, M, Lamb, H, Reiber, J. H. C., Lelieveldt, B. P. F.: Multiview Active Appearance Models for Simultaneous Segmentation of Cardiac 2- and 4-Chamber Long-Axis Magnetic Resonance Images. *Investigative Radiology*. 40(4):195-203, April 2005.
70. Bu L. Munns S. Zhang H. Disterhoft M. Dixon M. Stolpen A. Sonka M. Scholz TD. Mahoney LT. Ge S. Rapid full volume data acquisition by real-time 3-dimensional echocardiography for assessment of left ventricular indexes in children: a validation study compared with magnetic resonance imaging. *Journal of the American Society of Echocardiography*. 18(4):299-305, 2005 Apr.
71. C. L. Feldman, A. U. Coskun, Y. Yeghiazarians, S. Kinlay, A. Wahle, M. E. Olszewski, J. D. Rossen, M. Sonka, J. J. Popma, J. Orav et al., Remodeling Characteristics of Minimally Diseased Coronary Arteries Are Consistent Along the Length of the Artery, *The American Journal of Cardiology*, Volume 97, Issue 1, January 2006, Pages 13-16.
72. Kang Li; Xiaodong Wu; Chen, D.Z.; Sonka, M.: Optimal Surface Segmentation in Volumetric Images- A Graph-Theoretic Approach. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Volume 28, Issue 1, Jan. 2006, Pages: 119 - 134.
73. Ramaswamy SD, Vigmostad SC, Wahle A, Lai YG, Olszewski ME, Braddy KC, Brennan TMH, Rossen JD, Sonka M, Chandran KB: Comparison of Left Anterior Descending Coronary Artery Hemodynamics before and after Angioplasty. *Journal of Biomechanical Engineering, American Society of Mechanical Engineers*, Vol. 128, Feb. 2006, pages 40–48.
74. J. Reinhardt, B. van Ginneken, M. Sonka: Special Issue on Pulmonary Imaging – Editorial. *IEEE Transactions on Medical Imaging*, Volume 25, Issue 4, 2006, Pages: 381–384.
75. Y. Xu, M. Sonka, G. McLennan, J. Guo, E. Hoffman: MDCT-based 3-D texture classification of emphysema and early smoking related pathologies. *IEEE Transactions on Medical Imaging*, Volume 25, Issue 4, 2006, Pages: 464–475.
76. K. Palagyi, J. Tschirren, E. A. Hoffman and M. Sonka: Quantitative analysis of pulmonary airway tree structures. *Comput Biol Med*. 36(9) p. 974-96, 2006.
77. Wahle A, Lopez J J, Olszewski M E, Vigmostad S C, Chandran K B, Rossen J D, Sonka M: Plaque Development, Vessel Curvature, and Wall Shear Stress in Coronary Arteries assessed by X-ray Angiography and Intravascular Ultrasound. *Medical Image Analysis*, Vol. 10, Number 4, Page 615-631, 2006.
78. Chandran K B, Wahle A, Vigmostad S C, Olszewski M E, Rossen J D, Sonka M: Coronary Arteries: Imaging, Reconstruction, and Fluid Dynamic Analysis. *Critical Reviews in Biomedical Engineering*, Begell House, Redding, Volume 34, Number 1, Page 23-103, 2006.
79. Oost, E.; Koning, G.; Sonka, M.; Oemrawsingh, P.V.; Reiber, J.H.C.; Lelieveldt, B.P.F.: Automated contour detection in X-ray left ventricular angiograms using multiview active appearance models and dynamic programming. *IEEE Transactions on Medical Imaging*, Volume 25, Issue 9, Pages: 1158 - 1171, 2006.
80. Stone P H, Coskun A U, Kinlay S, Popma J J Sonka M, Wahle A, Yeghiazarians Y, Maynard C, Kuntz R E, Feldman C L: Regions of low endothelial shear stress are the sites where coronary plaque progresses and vascular remodelling occurs in humans: an in vivo serial study. *Eur Heart J.*, Vol. 28(6):705-10, 2007.
81. X. Wu, D. Chen, K. Li, M. Sonka, The Layered Net Surface Problems in Discrete Geometry and Medical Image Segmentation. *International Journal of Computational Geometry & Applications*, Vol. 17, 261-296, 2007.

82. E.I. Dedkov, M.T. Thomas, M. Sonka, F. Yang, T.W. Chittenden, J.M. Rhodes, M. Simons, E.L. Ritman, and R.J. Tomanek: Synectin/Syndecan-4 Regulate Coronary Arteriolar Growth During Development. *Developmental Dynamics*, Volume 236, p. 2004–2010, 2007.
83. M.K. Garvin, M.D. Abramoff, R. Kardon, S.R. Russell, X. Wu, and M. Sonka, Intraretinal layer segmentation of macular optical coherence tomography images using optimal 3-D graph search, *IEEE Transactions on Medical Imaging*, Vol. 27, p. 1495–1506, 2008.
84. Sonka, M.: Editorial. *IEEE Transactions on Medical Imaging*, Vol. 28, p. 1 - 2, 2009.
85. H.W. van Dijk, P. H. B. Kok, M. K. Garvin, M. Sonka, R. P. J. Michels, R. O. Schlingemann, F. D. Verbraak and M. D. Abramoff: Selective loss of inner retinal layer thickness in type 1 diabetic patients with minimal diabetic retinopathy, *Investigative Ophthalmology and Visual Science*, 2009;50:3404-3409.
86. M. K. Garvin, M. D. Abramoff, X. Wu, S. R. Russell, T. L. Burns, and M. Sonka, Automated 3-D intraretinal layer segmentation of macular spectral-domain optical coherence tomography images, *IEEE Transactions on Medical Imaging*, Vol. 28, p. 1436 - 1447, 2009.
87. J.D. Dawson, M. Sonka, M.B. Blecha, W. Lin, P. H. Davis: Risk Factors Associated With Aortic and Carotid Intima-Media Thickness in Adolescents and Young Adults: The Muscatine Offspring Study, *J Am Coll Cardiol* 2009;53:2273–2279)
88. F. Zhao, H. Zhang, A. Wahle, M. T. Thomas, A. H. Stolpen, T. D. Scholz and M. Sonka, Congenital aortic disease: 4D magnetic resonance segmentation and quantitative analysis, *Medical Image Analysis*, 2009, (13), 483–493.
89. M D Abramoff, K Lee, M Niemeijer, W L M Alward, E C Greenlee, M K Garvin, M Sonka, Y H Kwon: Automated Segmentation of the Cup and Rim from Spectral Domain OCT of the Optic Nerve Head *Investigative Ophthalmology and Visual Science*. Vol. 50, 5778-5784, 2009.
90. Shikata H, McLennan G, Hoffman EA, Sonka M.: Segmentation of Pulmonary Vascular Trees from Thoracic 3D CT Images. *Int J Biomed Imaging*. 2009;2009:636240. Epub 2009 Dec 14.
91. Lee, K., Niemeijer, M., Garvin, M. K., Kwon, Y. H., Sonka, M., Abramoff, M. D.: Segmentation of the Optic Disc in 3-D OCT Scans of the Optic Nerve Head. *IEEE Trans. on Medical Imaging*, Vol. 29, p. 159 - 168, 2010.
92. Zhang, H, Wahle, A, Johnson, R, Scholz, T, Sonka, M: 4D Cardiac MR Image Analysis: Left and Right Ventricular Morphology and Function, *IEEE Trans. on Medical Imaging*, Vol. 29, p. 350-364, 2010.
93. Quellec, G.; Lee, K.; Dolejsi, M.; Garvin, M.K.; Abramoff, M.D.; Sonka, M.; Three-Dimensional Analysis of Retinal Layer Texture: Identification of Fluid-Filled Regions in SD-OCT of the Macula, *IEEE Transactions on Medical Imaging*, vol.29, pp.1321-1330, June 2010.
94. Sonka, M.: Editorial. *IEEE Transactions on Medical Imaging*, Vol. 29, pp.581-582, 2010.
95. Johnson RK, Premraj S, Patel SS, Walker N, Wahle A, Sonka M, Scholz TD.: Automated analysis of four-dimensional magnetic resonance images of the human aorta. *Int J Cardiovasc Imaging*. 2010 Jun;26(5):571-578.
96. Saha, P.K.; Gao, Z.; Alford, S.K.; Sonka, M.; Hoffman, E.A.; Topomorphologic Separation of Fused Isointensity Objects via Multiscale Opening: Separating Arteries and Veins in 3-D Pulmonary CT, *IEEE Transactions on Medical Imaging*, vol.29, pp.840-851, 2010.

97. Yin Y.; Zhang, X.; Williams, R.; Wu, X.; Anderson, D.D.; Sonka, M.; LOGISMOS – Layered Optimal Graph Image Segmentation of Multiple Objects and Surfaces: Cartilage Segmentation in the Knee Joint, *IEEE Transactions on Medical Imaging*, vol.29, pp.2023-2037, 2010.
98. Abramoff, M.D.; Garvin, M.K.; Sonka, M.; Retinal Imaging and Image Analysis, *IEEE Reviews in Biomedical Engineering*, , vol.3, pp.169-208, 2010.
99. Davis PH, Dawson JD, Blecha MB, Mastbergen RK, Sonka M.: Measurement of aortic intimal-medial thickness in adolescents and young adults. *Ultrasound Med Biol*. 2010 Apr;36(4):560-5.
100. Lee K, Johnson RK, Yin Y, Wahle A, Olszewski ME, Scholz TD, Sonka M.: Three-dimensional thrombus segmentation in abdominal aortic aneurysms using graph search based on a triangular mesh. *Comput Biol Med*. 2010 Mar;40(3):271-8. Epub 2010 Jan 13.
101. Wu, X.; Dou, X.; Wahle, A.; Sonka, M.; Region Detection by Minimizing Intraclass Variance with Geometric Constraints, Global Optimality and Efficient Approximation, *IEEE Transactions on Medical Imaging*, E-pub ahead of print, 10.1109/TMI.2010.2095870
102. Xu Z, Sonka M, Saha PK.: Improved tensor scale computation with application to medical image interpolation. *Comput Med Imaging Graph*. 2010 Oct 18. [Epub ahead of print]
103. H W Van Dijk, F D Verbraak, P H Kok, M K Garvin, M Sonka, K Lee, J H DeVries, R P Michels, M E van Velthoven, R O Schlingemann, M D Abramoff: Decreased Retinal Ganglion Cell Layer Thickness in Type 1 Diabetic Patients, E-Pub ahead of print 10.1167/iovs.09-5041
104. Wu, X., Dou, X., Wahle, A., Sonka, M.: Region Detection by Minimizing Intraclass Variance with Geometric Constraints, Global Optimality and Efficient Approximation, *IEEE Transactions on Medical Imaging*, vol. 30, no. 3, pp. 814-827, 2011; 10.1109/TMI.2010.2095870
105. Han, D., Bayouth, J., Bhatia, S., Sonka, M., and Wu, X.: Characterization and Identification of Spatial Artifacts during 4D-CT Imaging. *Medical Physics*, vol. 38, no. 4, pp. 2074-2087, 2011; doi:10.1118/1.3553556.
106. Kovarnik T, Mintz GS, Skalicka H, Kral A, Horak J, Skulec R, Uhrova J, Martasek P, Downe RW, Wahle A, Sonka M, Mrazek V, Aschermann M, Linhart A. "Virtual histology evaluation of atherosclerosis regression during atorvastatin and ezetimibe administration." *Circ J* 76(1):176-183.
107. Antony B, Abramoff MD, Tang L, Ramdas WD, Vingerling JR, Jansonius NM, Lee K, Kwon YH, Sonka M, Garvin MK. Automated 3-D method for the correction of axial artifacts in spectral-domain optical coherence tomography images. *Biomed Opt Express*. 2(8):2403-16. Epub 2011 Jul 27.
108. Bayouth JE, Casavant TL, Graham MM, Sonka M, Muruganandham M, Buatti JM. "Image-based biomarkers in clinical practice." *Semin Radiat Oncol*. 2011 21(2):157-166. Review.
109. Kovarnik T, Mintz GS, Sonka M. "The late stent malapposition develops also after paclitaxel balloon predilation before bare-metal stent implantation: case description." *Eur Heart J*. 32(11):1432, 2011.
110. Xu X, Niemeijer M, Song Q, Sonka M, Garvin MK, Reinhardt JM, Abramoff MD. "Vessel boundary delineation on fundus images using graph-based approach." *IEEE Trans Med Imaging*. 30(6):1184-91, 2011.
111. Johnson RK, Premraj S, Patel SS, Wahle A, Stolpen A, Sonka M, Scholz TD. "Quantitative assessment of the entire thoracic aorta from magnetic resonance images." *Cardiol Young*. 21(2):170-177, 2011.

112. Xu Z, Sonka M, Saha PK. "Improved tensor scale computation with application to medical image interpolation." *Comput Med Imaging Graph.* 35(1):64-80, 2011.
113. van Dijk HW, Verbraak FD, Stehouwer M, Kok PH, Garvin MK, Sonka M, DeVries JH, Schlingemann RO, Abramoff MD. "Association of visual function and ganglion cell layer thickness in patients with diabetes mellitus type 1 and no or minimal diabetic retinopathy." *Vision Res.* 51(2):224-8, 2011.
114. Kral A, Kovarnik T, Kralik L, Skalicka H, Horak J, Mintz GS, Uhrova J, Sonka M, Wahle A, Downe R, Aschermann M, Martasek P, Linhart A.: Genetic variants in haem oxygenase-1 and endothelial nitric oxide synthase influence the extent and evolution of coronary artery atherosclerosis. *Folia Biol (Praha).* 2011;57(5):182-90.
115. Saha PK, Liang G, Elkins JM, Coimbra A, Duong LT, Williams DS, Sonka M.: A New Osteophyte Segmentation Algorithm using Partial Shape Model and its Applications to Rabbit Femur Anterior Cruciate Ligament Transection via Micro-CT Imaging. *IEEE Trans Biomed Eng.* p. 2212–2227, 2011.
116. M. K. Garvin, M. D. Abramoff, K. Lee, M. Niemeijer, M. Sonka, and Y. H. Kwon, "2-D Pattern of Nerve Fiber Bundles in Glaucoma Emerging From Spectral-Domain Optical Coherence Tomography," *Investigative Ophthalmology & Visual Science*, vol. 53, pp. 483-9, Jan. 2012.
117. K. Lee, Y. H. Kwon, M. K. Garvin, M. Niemeijer, M. Sonka, and M. D. Abramoff, "Distribution of damage to the entire retinal ganglion-cell pathway quantified using SD-OCT analysis in patients with glaucoma," *Archives of Ophthalmology*, 130(9), 1118-1126, 2012.
118. van Dijk HW, Verbraak FD, Kok PH, Stehouwer M, Garvin MK, Sonka M, DeVries JH, Schlingemann RO, Abramoff MD: Early Neurodegeneration in the Retina of Type 2 Diabetic Patients. *Investigative Ophthalmology & Visual Science*, 53(6), 2715-2719, 2012.
119. Chen XJ, Niemeijer M, Zhang L, Lee K, Abramoff MD, Sonka M. Three-dimensional segmentation of fluid-associated abnormalities in retinal OCT: Probability constrained graph-search search-graph-cut. *IEEE TMI*, 2012; 31(8):1521-1531.
120. Chen XJ, Zhang L, Sohn EH, Lee KM, Niemeijer M, Chen J, Sonka M, Abramoff MD. Quantification of external limiting membrane disruption caused by diabetic macular edema from SD-OCT. *Invest Ophthalmol Vis Sci*, 53(13):8042-8, 2012.
121. Kovarnik, T., Mintz, G. S., Skalicka, H., Kral, A., Horak, J., Skulec, R., Uhrova, J., Martasek, P., Downe, R. W., Wahle, A., Sonka, M., Mrazek, V., Aschermann, M., Linhart, A.: Virtual Histology Evaluation Of Atherosclerosis Regression During Atorvastatin And Ezetimibe Administration - Heaven Study. *Circulation Journal*, 76(1), 176-183, 2012.
122. Fedorov, A., Beichel, R., Kalpathy-Cramer, J., Finet, J., Fillion-Robin, J.-C., Pujol, S., Bauer, C., Jennings, D., Fennessy, F., Sonka, M., Buatti, J., Aylward, S., Miller, J. V., Pieper, S., Kikinis, R.: 3D Slicer As An Image Computing Platform For The Quantitative Imaging Network. *Magnetic Resonance Imaging*, 30(9), 1323-1341, 2012.
123. Springelkamp H, Lee K, Ramdas WD, Vingerling JR, Hofman A, Klaver CC, Sonka M, Abramoff MD, Jansonius NM.: Optimizing the information yield of 3-D OCT in glaucoma. *Invest Ophthalmol Vis Sci.* 2012 Dec 13;53(13):8162-71.
124. Zhang L, Lee KM, Niemeijer M, Mullins RF, Sonka M, Abramoff MD. Automated segmentation of the choroid from clinical SD-OCT. *Invest Ophthalmol Vis Sci*, 53(12), p. 7510-7519, 2012.

125. Bauer, C., Sun, S., Sun, W., Otis, J., Wallace, A., Smith, B. J., Sunderland, J. J., Graham, M. M., Sonka, M., Buatti, J. M., Beichel, R. R.: Automated Measurement Of Uptake In Cerebellum, Liver, And Aortic Arch In Full-Body FDG PET CT Scans. *Medical Physics*, 39(6), 3112-3123, 2013.
126. Zhang, H., Abiose, A. K., Gupta, D., Campbell, D. N., Martins, J. B., Sonka, M., Wahle, A.. Novel Indices For Left-Ventricular Dyssynchrony Characterization Based On Highly Automated Segmentation From Real-Time 3-D Echocardiography. *Ultrasound In Medicine And Biology*, 39(1), 72-88, 2013.
127. Tang L, Niemeijer M, Reinhardt J, Garvin MK, Sonka M, Abramoff MD. Splat feature classification with application to retinal hemorrhage detection in fundus images. *IEEE Trans Med Imaging*, 32(2):364-75, 2013.
128. Song Q, Bai J, Garvin MK, Sonka M, Buatti JM, Wu X.: Optimal multiple surface segmentation with shape and context priors. *IEEE Trans Med Imaging*. 32(2):376-386, 2013.
129. Sohn EH, Chen JJ, Lee K, Niemeijer M, Sonka M, Abramoff MD.: Reproducibility of Diabetic Macular Edema Estimates From SD-OCT Is Affected by the Choice of Image Analysis Algorithm. *Invest Ophthalmol Vis Sci*. 54(6):4184-4188, 2013.
130. Kafieh R, Rabbani H, Abramoff MD, Sonka M.: Curvature correction of retinal OCTs using graph-based geometry detection. *Phys Med Biol*. 58(9):2925-2938, 2013.
131. Sun S, Sonka M, Beichel R.: Lung segmentation refinement based on optimal surface finding utilizing a hybrid desktop/virtual reality user interface. *Comput Med Imaging Graph.*, 37(1):15-27, 2013.
132. Kovarnik T, Kral A, Skalicka H, Mintz GS, Kralik L, Chval M, Horak J, Skalicka L, Sonka M, Wahle A, Downe RW, Uhrova J, Benakova H, Cernohousova L, Martasek P, Belohlavek J, Aschermann M, Linhart A.: The prediction of coronary artery disease based on non-invasive examinations and heme oxygenase 1 polymorphism versus virtual histology. *J Invasive Cardiol*. 25(1):32-37, 2013.
133. Kovarnik T, Kral A, Skalicka H, Skalicka L, Dostal O, Kralik L, Martasek P, Aschermann M, Horak J, Linhart A, Wahle A, Sonka M.: Prediction of coronary vessel involvement on the basis of atherosclerosis risk factor analysis. *Bratisl Lek Listy*. 114(7):413-417, 2013.
134. Liu X, Chen DZ, Tawhai MH, Wu X, Hoffman EA, Sonka M.: Optimal graph search based segmentation of airway tree double surfaces across bifurcations. *IEEE Trans Med Imaging*. 32(3):493-510, 2013.
135. Zhang L, Lee K, Niemeijer M, Mullins RF, Sonka M, Abramoff MD.: Automated segmentation of the choroid from clinical SD-OCT. *Invest Ophthalmol Vis Sci*. 53(12):7510-7519, 2013.
136. Demirkaya N, van Schuppen SM, Abramoff MD, Garvin MK, Sonka M, Schlingemann RO, Verbraak FD.: Effect of Age on Individual Retinal Layer Thickness in Normal Eyes as Measured with Spectral-Domain Optical Coherence Tomography. *Invest Ophthalmol Vis Sci*. 54(7):4934-4940, doi: 10.1167/iovs.13-11913, 2013.
137. Sun S, Sonka M, Beichel R.: Graph-Based IVUS Segmentation with Efficient Computer-Aided Refinement. *IEEE Trans Med Imaging*. 32(8):1536-1549. doi: 10.1109/TMI.2013.2260763, 2013.
138. Abramoff MD, Mullins RF, Lee K, Hoffmann JM, Sonka M, Critser DB, Stasheff SF, Stone EM.: Human Photoreceptor Outer Segments Shorten During Light Adaptation. *Invest Ophthalmol Vis Sci*. 54(5):3721-3728. doi: 10.1167/iovs.13-11812, 2013.

139. Garvin MK, Lee K, Burns TL, Abramoff MD, Sonka M, Kwon YH: Reproducibility of SD-OCT- Based Ganglion Cell-Layer Thickness in Glaucoma Using Two Different Segmentation Algorithms. *Invest Ophthalmol Vis Sci.* 54(10):6998-7004. doi: 10.1167/iovs.13-12131, 2013.
140. Chen X, Hou P, Jin C, Zhu W, Luo X, Shi F, Sonka M, Chen H.: Quantitative analysis of retinal layer optical intensities on three-dimensional optical coherence tomography. *Invest Ophthalmol Vis Sci.* 54(10):6846-6851. doi: 10.1167/iovs.13-12062, 2013.
141. Lee K, Sonka M, Kwon YH, Garvin MK, Abramoff MD.: Adjustment of the retinal angle in SD- OCT of glaucomatous eyes provides better intervisit reproducibility of peripapillary RNFL thickness. *Invest Ophthalmol Vis Sci.* 54(7):4808-4812. doi: 10.1167/iovs.13-12211, 2013.
142. Kafieh R, Rabbani H, Abramoff MD, Sonka M.: Intra-retinal layer segmentation of 3D optical coherence tomography using coarse grained diffusion map. *Med Image Anal.* 2013 17(8):907-28.
143. Rabbani H, Sonka M, Abramoff MD. Optical Coherence Tomography Noise Reduction Using Anisotropic Local Bivariate Gaussian Mixture Prior in 3D Complex Wavelet Domain. *Int J Biomed Imaging.* 2013;2013:417-491.
144. Oguz I, Zhang H, Rumple A, Sonka M.: RATS: Rapid Automatic Tissue Segmentation in rodent brain MRI. *J Neurosci Methods.* 2014 Jan 15;221:175-82
145. Zhang L, Sonka M, Folk JC, Russell SR, Abramoff MD.: Quantifying disrupted outer retinal- subretinal layer in SD-OCT images in choroidal neovascularization. *Invest Ophthalmol Vis Sci.* 2014, 55(4):2329-35.
146. Bogunovic H, Kwon YH, Rashid A, Lee K, Critser DB, Garvin MK, Sonka M, Abramoff MD.: Relationships of retinal structure and Humphrey 24-2 visual field thresholds in patients with glaucoma. *Invest Ophthalmol Vis Sci.* 2014, 56(1):259-71.
147. Bogunovic H, Sonka M, Kwon YH, Kemp P, Abramoff MD, Wu X.: Multi-surface and multi-field co-segmentation of 3-D retinal optical coherence tomography. *IEEE Trans Med Imaging.* 2014, 33(12):2242-53.
148. Gerendas BS, Waldstein SM, Simader C, Deak G, Hajnajeeb B, Zhang L, Bogunovic H, Abramoff MD, Kundi M, Sonka M, Schmidt-Erfurth U.: Three-dimensional automated choroidal volume assessment on standard spectral-domain optical coherence tomography and correlation with the level of diabetic macular edema. *Am J Ophthalmol.* 2014, 158(5):1039-48.
149. Oguz I, Sonka M.: LOGISMOS-B: layered optimal graph image segmentation of multiple objects and surfaces for the brain. *IEEE Trans Med Imaging.* 2014 Jun;33(6):1220-35.
150. Shi F, Chen X, Zhao H, Zhu W, Xiang D, Gao E, Sonka M, Chen H.: 5. Automated 3-D Retinal Layer Segmentation of Macular Optical Coherence Tomography Images with Serous Pigment Epithelial Detachments. *IEEE Trans Med Imaging.* 2015 Feb;34(2):441-52.
151. Almeida DR, Zhang L, Chin EK, Mullins RF, Kucukevcilioglu M, Critser DB, Sonka M, Stone EM, Folk JC, Abramoff MD, Russell SR.: Comparison of Retinal and Choriocapillaris Thicknesses Following Sitting to Supine Transition in Healthy Individuals and Patients With Age-Related Macular Degeneration. *JAMA Ophthalmol.* 2015 Mar; 133(3):297-303.
152. Zhang, Ling; Wahle, Andreas; Chen, Zhi; Zhang, Li; Downe, Richard W; Kovarnik, Tomas; Sonka, Milan; Simultaneous registration of location and orientation in intravascular ultrasound pullbacks pairs via 3D graph-based optimization *IEEE transactions on medical imaging* 34 12 2550-2561 2015

153. Zhang L, Buitendijk GH, Lee K, Sonka M, Springelkamp H, Hofman A, Vingerling JR, Mullins RF, Klaver CC, Abramoff MD.: Validity of Automated Choroidal Segmentation in SS-OCT and SD-OCT. *Invest Ophthalmol Vis Sci.* 2015 May; 56(5):3202-11.
154. Kafieh R, Rabbani H, Hajizadeh F, Abramoff MD, Sonka M.: Thickness mapping of eleven retinal layers segmented using the diffusion maps method in normal eyes. *J Ophthalmol.* 2015;2015:259-123.
155. Xu X, Lee K, Zhang L, Sonka M, Abramoff M.: Stratified Sampling Voxel Classification for Segmentation of Intraretinal and Subretinal Fluid in Longitudinal Clinical OCT Data. *IEEE Trans Med Imaging.* 34 (7), 1616-1623, 2015.
156. Sonka, M, Abramoff, MD (2016). Quantitative analysis of retinal OCT. *Med Image Anal*, 33:165-9.
157. Hirai, T, Chen, Z, Zhang, L, Baaj, S, Kovarnik, T, Porcaro, K, Kaminski, J, Hawn, S, Agrawal, A, Makki, N, Downe, R, Wahle, A, Sonka, M, Lopez, JJ (2016). Evaluation of Variable Thin-Cap Fibroatheroma Definitions and Association of Virtual Histology-Intravascular Ultrasound Findings With Cavity Rupture Size. *Am. J. Cardiol.*, 118, 2:162-9.
158. Beichel, RR, Van Tol, M, Ulrich, EJ, Bauer, C, Chang, T, Plichta, KA, Smith, BJ, Sunderland, JJ, Graham, MM, Sonka, M, Buatti, JM (2016). Semiautomated segmentation of head and neck cancers in 18F-FDG PET scans: A just-enough-interaction approach. *Med Phys*, 43, 6:2948.
159. Sohn, EH, van Dijk, HW, Jiao, C, Kok, PH, Jeong, W, Demirkaya, N, Garmager, A, Wit, F, Kucukcilioglu, M, van Velthoven, ME, DeVries, JH, Mullins, RF, Kuehn, MH, Schlingemann, RO, Sonka, M, Verbraak, FD, Abramoff, MD (2016). Retinal neurodegeneration may precede microvascular changes characteristic of diabetic retinopathy in diabetes mellitus. *Proc. Natl. Acad. Sci. U.S.A.*, 113, 19:E2655-64.
160. Lee, K, Buitendijk, GH, Bogunovic, H, Springelkamp, H, Hofman, A, Wahle, A, Sonka, M, Vingerling, JR, Klaver, CC, Abramoff, MD (2016). Automated Segmentability Index for Layer Segmentation of Macular SD-OCT Images. *Transl Vis Sci Technol*, 5, 2:14.
161. Choi, CS, Zhang, L, Abramoff, MD, Sonka, M, Shifera, AS, Kay, CN (2016). Evaluating Efficacy of Aflibercept in Refractory Exudative Age-Related Macular Degeneration With OCT Segmentation Volumetric Analysis. *Ophthalmic Surg Lasers Imaging Retina*, 47, 3:245-51.
162. Philip, AM, Gerendas, BS, Zhang, L, Faatz, H, Podkowinski, D, Bogunovic, H, Abramoff, MD, Haggmann, M, Leitner, R, Simader, C, Sonka, M, Waldstein, SM, Schmidt-Erfurth, U (2016). Choroidal thickness maps from spectral domain and swept source optical coherence tomography: algorithmic versus ground truth annotation. *Br J Ophthalmol*, e-pub ahead of print.
163. Chen, H, Chen, X, Qiu, Z, Xiang, D, Chen, W, Shi, F, Zheng, J, Zhu, W, Sonka, M (2015). Quantitative analysis of retinal layers' optical intensities on 3D optical coherence tomography for central retinal artery occlusion. *Sci Rep*, 5:9269.
164. Bogunovic, H, Kwon, YH, Rashid, A, Lee, K, Critser, DB, Garvin, MK, Sonka, M, Abramoff, MD (2015). Relationships of retinal structure and Humphrey 24-2 visual field thresholds in patients with glaucoma. *Invest. Ophthalmol. Vis. Sci.*, 56, 1:259-71.
165. Kovarnik, Tomas; Jerabek, Stepan; Chen, Zhi; Wahle, Andreas; Zhang, Ling; Dostalova, Gabriela; Skalicka, Hana; Kral, Ales; Horak, Jan; Sonka, Milan; Non-invasive endothelial function assessment using digital reactive hyperaemia correlates with three-dimensional intravascular ultrasound and virtual histology-derived plaque volume and plaque phenotype *Kardiologia Polska (Polish Heart Journal)* 74 12 1485-1491 2016

166. Kral, A; Kovarnik, T; Vanickova, Z; Skalicka, H; Horak, J; Bayerova, K; Chen, Z; Wahle, A; Zhang, L; Kopriva, K; Cystatin C Is Associated with the Extent and Characteristics of Coronary Atherosclerosis in Patients with Preserved Renal Function *Folia Biologica (Praha)* 62 225-234 2016
167. Oguz, Ipek; Abramoff, Michael D; Zhang, Li; Lee, Kyungmoo; Zhang, Ellen Ziyi; Sonka, Milan; 4D Graph-Based Segmentation for Reproducible and Sensitive Choroid Quantification From Longitudinal OCT Scans 4D Choroid Segmentation from Longitudinal OCT Scans *Investigative ophthalmology & visual science* 57 9 OCT621-OCT630 2016
168. Philip, AM, Gerendas, BS, Zhang, L, Faatz, H, Podkowinski, D, Bogunovic, H, Abramoff, MD, Haggmann, M, Leitner, R, Simader, C, Sonka, M, Waldstein, SM, Schmidt-Erfurth, U (2016). Choroidal thickness maps from spectral domain and swept source optical coherence tomography: algorithmic versus ground truth annotation. *Br J Ophthalmol*, 2016 Oct; 100(10):1372-6
169. Sophie Klimscha, Sebastian M Waldstein, Thomas Schlegl, Hrvoje Bogunovic, Amir Sadeghipour, Ana-Maria Philip, Dominika Podkowinski, Eleonore Pablik, Li Zhang, Michael D Abramoff, Milan Sonka, Bianca S Gerendas, Ursula Schmidt-Erfurth: Spatial Correspondence Between Intraretinal Fluid, Subretinal Fluid, and Pigment Epithelial Detachment in Neovascular Age-Related Macular Degeneration, *Investigative Ophthalmology & Visual Science* 58 (10), 4039-4048, 2017
170. MS Miri, MD Abramoff, YH Kwon, M Sonka, MK Garvin: A machine-learning graph-based approach for 3D segmentation of Bruch's membrane opening from glaucomatous SD-OCT volumes, *Medical Image Analysis* 39, 206-217, 2017
171. L Zhang, H Kong, S Liu, T Wang, S Chen, M Sonka: Graph-based segmentation of abnormal nuclei in cervical cytology, *Computerized Medical Imaging and Graphics* 56, 38-48 2 2017
172. H Isack, O Veksler, I Oguz, M Sonka, Y Boykov: Efficient optimization for Hierarchically-structured Interacting Segments (HINTS), arXiv preprint arXiv:1703.10530, 2017
173. Barbara EK Klein, Chris A Johnson, Stacy M Meuer, Kyungmoo Lee, Andreas Wahle, Kristine E Lee, Amruta Kulkarni, Milan Sonka, Michael D Abramoff, Ronald Klein: Nerve Fiber Layer Thickness and Characteristics Associated with Glaucoma in Community Living Older Adults: Prelude to a Screening Trial? *Ophthalmic epidemiology* 24 (2), 104-110, 2017
174. Tomas Kovarnik, Zhi Chen, Andreas Wahle, Ling Zhang, Hana Skalicka, Ales Krala, John J Lopez, Jan Horak, Milan Sonka, Ales Linhart: Fenotipo del engrosamiento intimal patologico: no tan in- ocente como se pensaba. Estudio de la histologia virtual de una serie de casos con ecografía intravas- cular 3D, *Revista Espanola de Cardiologia* 70 (1), 25-33, 2017
175. Tomas Kovarnik, Zhi Chen, Andreas Wahle, Ling Zhang, Hana Skalicka, Ales Kral, John J Lopez, Jan Horak, Milan Sonka, Ales Linhart: Pathologic intimal thickening plaque phenotype: Not as innocent as previously thought. a serial 3D intravascular ultrasound virtual histology study, *Revista Espanola de Cardiologia (English Edition)* 70 (1), 25-33 2017
176. Adnan Rashid, Sebastian M Waldstein, Bianca S Gerendas, Hrvoje Bogunovic, Andreas Wahle, Kyungmoo Lee, Kai Wang, Christian Simader, Michael D Abramoff, Ursula Schmidt-Erfurth, Milan Sonka: Reproducibility of Retinal Thickness Measurements across Spectral-Domain Optical Coherence Tomography Devices using Iowa Reference Algorithm, arXiv preprint arXiv:1612.06442
177. Xiang, D., Bagci, U., Jin, C., Shi, F., Zhu, W., Yao, J., Sonka, M., Chen, X. (2017). CorteXpert: A model-based method for automatic renal cortex segmentation. *Medical image analysis*, 42, 257-273.

178. Guo, Z., Kwon, Y. H., Lee, K., Wang, K., Wahle, A., Alward WLM, Fingert, J. H., Bettis, D. I., Johnson, C. A., Garvin, M. K., Sonka, M., Abramoff, M. D. (2017). Optical Coherence Tomography Analysis Based Prediction of Humphrey 24-2 Visual Field Thresholds in Patients With Glaucoma. *Investigative ophthalmology & visual science*, 58(10), 3975-3985.
179. Guo, Z., Zhang, L., Lu, L., Bagheri, M., Summers, R. M., Sonka, M., Yao, J. (2018). Deep LO- GISMOS: Deep Learning Graph-based 3D Segmentation of Pancreatic Tumors on CT scans. *arXiv preprint arXiv:1801.08599*.
180. Pazdernik, M., Chen, Z., Bedanova, H., Kautzner, J., Melenovsky, V., Karmazin, V., Malek, I., Tomasek, A., Ozabalova, E., Krejci, J., others (2018). Early detection of cardiac allograft vasculopathy using highly automated 3-dimensional optical coherence tomography analysis. *The Journal of Heart and Lung Transplantation*.
181. Kashyap, S., Zhang, H., Rao, K., Sonka, M. (2018). Learning-Based Cost Functions for 3-D and 4- D Multi-Surface Multi-Object Segmentation of Knee MRI: Data From the Osteoarthritis Initiative. *IEEE transactions on medical imaging*, 37(5), 1103–1113.
182. Zhang, L., Wahle, A., Chen, Z., Lopez, J. J., Kovarnik, T., Sonka, M. (2018). Predicting Locations of High-Risk Plaques in Coronary Arteries in Patients Receiving Statin Therapy. *IEEE Transactions on Medical Imaging*, 37(1), 151–161.
183. Chen, Z., Pazdernik, M., Zhang, H., Wahle, A., Guo, Z., Bedanova, H., Kautzner, J., Melenovsky, V., Kovarnik, T., Sonka, M. (2018). Quantitative 3D Analysis of Coronary Wall Morphology in Heart Transplant Patients: OCT-Assessed Cardiac Allograft Vasculopathy Progression. *Medical image analysis*, 50, 95–105.
184. Kashyap, S.; Zhang, H.; Sonka, M. (2019); Just-Enough Interaction Approach to Knee MRI Segmentation: Data from the Osteoarthritis Initiative, *arXiv preprint arXiv:1903.04027*.
185. Jerabek, S., Zemanek, D., Pudil, J., Bayerova, K., Kral, A., Kopriva, K., Kawase, Y., Omori, H., Tanigaki, T., Chen, Z., others (2019). Endothelial dysfunction assessed by digital tonometry and discrepancy between fraction flow reserve and instantaneous wave free ratio. *Acta cardiologica*, 1–6.
186. Minaee, S., Kafieh, R., Sonka, M., Yazdani, S., Soufi, G. J. (2020). Deep-Covid: Predicting Covid-19 from chest X-ray images using deep transfer learning. *Medical image analysis*, 65, 101794.
187. Guo, Z., Zhang, H., Chen, Z., van der Plas, E., Gutmann, L., Thedens, D., Nopoulos, P., Sonka, M. (2020). FilterNet: A Neighborhood Relationship Enhanced Fully Convolutional Network for Calf Muscle Compartment Segmentation. *arXiv preprint arXiv:2006.11930*.
188. Pazdernik, M., Wichterle, D., Chen, Z., Bedanova, H., Kautzner, J., Melenovsky, V., Karmazin, V., Malek, I., Stiavnicky, P., Tomasek, A., others (2020). Heart rate and early progression of cardiac allograft vasculopathy: A prospective study using highly automated 3-D optical coherence tomography analysis. *Clinical Transplantation*, 34(2), ePub ahead of print - e13773.
189. Yuan, Z., Yan, Y., Sonka, M., Yang, T. (2020). Robust Deep AUC Maximization: A New Surrogate Loss and Empirical Studies on Medical Image Classification. *arXiv preprint arXiv:2012.03173*.
190. Saeedizadeh, N., Minaee, S., Kafieh, R., Yazdani, S., Sonka, M. (2020). COVID TV-UNet: Segmenting COVID-19 Chest CT Images Using Connectivity Imposed U-Net. *arXiv preprint arXiv:2007.12303*
191. Minaee, S., Kafieh, R., Sonka, M., Yazdani, S., Soufi, G. J. (2020). Deep-covid: Predicting covid-19 from chest x-ray images using deep transfer learning. *arXiv preprint arXiv:2004.09363*

192. Samaniego, Edgar A; Roa, Jorge A; Zhang, Honghai; Kosciak, Timothy R; Ortega-Gutierrez, Santiago; Bathla, Girish; Sonka, Milan; Derdeyn, Colin; Magnotta, Vincent A; Hasan, David; Increased contrast enhancement of the parent vessel of unruptured intracranial aneurysms in 7T MR imaging *Journal of neurointerventional surgery*, 12, 10, 1018-1022, 2020
193. Yazdani, Shakib; Minaee, Shervin; Kafieh, Rahele; Saeedizadeh, Narges; Sonka, Milan; Covid CT- Net: Predicting covid-19 from chest ct images using attentional convolutional network *arXiv preprint arXiv:2009.05096* 2020
194. Wahle, Andreas; Zhang, Ling; Chen, Zhi; Zhang, Honghai; Lopez, John J; Kovarnik, Tomas; Sonka, Milan; Quantitative Assessment and Prediction of Coronary Plaque Development Using Serial Intravascular Ultrasound and Virtual Histology *Intravascular Ultrasound* 121-140 2020 Elsevier
195. Bedanova, H., Pazdernik, M., Sonka, M., Zhi, C., Krejci, J., Novakova, M., Dobsak, P., Nemecek, P. (2021). Effects of implanting a long-term left ventricle assist device on post-transplant outcomes. *The International Journal of Artificial Organs*, 44(1), 39-45.
196. Guo, Z., Zhang, H., Chen, Z., van der Plas, E., Gutmann, L., Thedens, D., Nopoulos, P., Sonka, M. (2021). Fully automated 3D segmentation of MR-imaged calf muscle compartments: Neighborhood relationship enhanced fully convolutional network. *Computerized Medical Imaging and Graphics*, 87, 101835.
197. van der Plas, E., Gutmann, L., Thedens, D., Shields, R. K., Langbehn, K., Guo, Z., Sonka, M., Nopoulos, P. (2021). Quantitative muscle MRI as a sensitive marker of early muscle pathology in myotonic dystrophy type 1. *Muscle & Nerve*, 63 4 553-562 2021
198. Saeedizadeh, Narges; Minaee, Shervin; Kafieh, Rahele; Yazdani, Shakib; Sonka, Milan; COVID TV- Unet: Segmenting COVID-19 chest CT images using connectivity imposed Unet *Computer Methods and Programs in Biomedicine Update* 1 100007 2021 Elsevier
199. Pazdernik, Michal; Bedanova, Helena; Chen, Zhi; Kautzner, Josef; Melenovsky, Vojtech; Malek, Ivan; Slavcevic, Antonij; Bartonova, Michaela; Karmazin, Vladimir; Eckhardt, Tomas; " Donor specific anti-HLA antibodies and cardiac allograft vasculopathy: A prospective study using highly automated 3-D optical coherence tomography analysis *Transplant immunology* 65 101340 2021 Elsevier
200. Vecchi, Joseph; Mullan, Sean; Lopez, Josue; Hansen, Marlan R; Sonka, Milan; Lee, Amy; NeuriteNet: A Convolutional Neural Network for determining morphological differences in neurite growth *bioRxiv* 2021
201. Lopez, John J; Sonka, Milan; Is Deep Learning Coming to Guide Your Coronary Intervention? *Cardiovascular Interventions* 14 9 1030-1032 2021
202. Bathla, Girish; Priya, Sarv; Liu, Yanan; Ward, Caitlin; Le, Nam H; Soni, Neetu; Maheshwarappa, Ravishankar Pillenahalli; Monga, Varun; Zhang, Honghai; Sonka, Milan; Radiomics-based differentiation between glioblastoma and primary central nervous system lymphoma: A comparison of diagnostic performance across different MRI sequences and machine learning techniques *European radiology* 31 11 8703-8713 2021
203. Priya, Sarv; Liu, Yanan; Ward, Caitlin; Le, Nam H; Soni, Neetu; Pillenahalli Maheshwarappa, Ravishankar; Monga, Varun; Zhang, Honghai; Sonka, Milan; Bathla, Girish; Radiomics-Based Differentiation between Glioblastoma, CNS Lymphoma, and Brain Metastases: Comparing Performance across MRI Sequences and Machine Learning Models *Cancers* 13 9, 8703-8713, 2261 2021

204. Priya, Sarv; Liu, Yanan; Ward, Caitlin; Le, Nam H; Soni, Neetu; Pillenahalli Maheshwarappa, Ravishankar; Monga, Varun; Zhang, Honghai; Sonka, Milan; Bathla, Girish; Machine learning based differentiation of glioblastoma from brain metastasis using MRI derived radiomics Scientific reports 11 1 10-Jan 2021
205. Priya, Sarv; Liu, Yanan; Ward, Caitlin; Le, Nam H; Soni, Neetu; Pillenahalli Maheshwarappa, Ravishankar; Monga, Varun; Zhang, Honghai; Sonka, Milan; Bathla, Girish; Radiomic Based Machine Learning Performance for a Three Class Problem in Neuro-Oncology: Time to Test the Waters? Cancers 13 11 2568 2021
206. Zhang, Lichun; Guo, Zhihui; Zhang, Honghai; van der Plas, Ellen; Kosciak, Timothy R; Nopoulos, Peggy; Sonka, Milan; " Assisted annotation in Deep LOGISMOS: Combining deep learning and graph optimization for simultaneous multi-compartment 3D segmentation of calf muscles on MRI 2021 TechRxiv
207. Vecchi, Joseph T; Mullan, Sean; Lopez, Josue A; Hansen, Marlan R; Sonka, Milan; Lee, Amy; NeuriteNet: A convolutional neural network for assessing morphological parameters of neurite growth Journal of neuroscience methods 363 109349 2021 Elsevier
208. Peng, Yaopeng; Zheng, Hao; Zaman, Fahim; Zhang, Lichun; Wu, Xiaodong; Sonka, Milan; Chen, Danny; KCB-Net: A 3D Knee Cartilage and Bone Segmentation Network via Sparse Annotation 2021 TechRxiv
209. Bathla, Girish; Liu, Yanan; Zhang, Honghai; Sonka, Milan; Derdeyn, Colin; Computed Tomography Perfusion-Based Prediction of Core Infarct and Tissue at Risk: Can Artificial Intelligence Help Reduce Radiation Exposure? Stroke 52 12 e755-e759 2021
210. Peng, Yaopeng; Zheng, Hao; Liang, Peixian; Zhang, Lichun; Zaman, Fahim; Wu, Xiaodong; Sonka, Milan; Chen, Danny Z: KCB-Net: A 3D knee cartilage and bone segmentation network via sparse annotation, Medical image analysis, 82, 102574, 2022, Elsevier
211. Peng, Yaopeng; Zheng, Hao; Zhang, Lichun; Sonka, Milan; Chen, Danny Z: CMC-Net: 3D calf muscle compartment segmentation with sparse annotation, Medical Image Analysis, 79, 102460, 2022, Elsevier
212. Kassis, Nicholas; Kovarnik, Tomas; Chen, Zhi; Weber, Joseph R; Martin, Brendan; Darki, Amir; Woo, Vincent; Wahle, Andreas; Sonka, Milan; Lopez, John J: Fibrous cap thickness predicts stable coronary plaque progression: early clinical validation of a semiautomated OCT technology, Journal of the Society for Cardiovascular Angiography & Interventions, 1, 5, 100400, 2022, Elsevier
213. Lee, Sangil; Reddy Mudireddy, Avinash; Kumar Pasupula, Deepak; Adhaduk, Mehul; Barsotti, E John; Sonka, Milan; Statz, Giselle M; Bullis, Tyler; Johnston, Samuel L; Evans, Aron Z: Novel machine learning approach to predict and personalize length of stay for patients admitted with syncope from the emergency department, Journal of personalized medicine, 13, 1, 7, 2022
214. Chang, Jeremy; Liu, Yanan; Saey, Stephanie A; Chang, Kevin C; Shrader, Hannah R; Steckly, Kelsey L; Rajput, Maheen; Sonka, Milan; Chan, Carlos HF: Machine-learning based investigation of prognostic indicators for oncological outcome of pancreatic ductal adenocarcinoma, Frontiers in oncology, 12, 6660, 2022, Frontiers
215. Jensen, Niels Møller; Chen, Zhi; Clemmensen, Tor Skibsted; Neghabat, Omeed; Holck, Emil Nielsen; Pazdernik, Michal; Mogensen, Lone Juul Hune; Wahle, Andreas; Sonka, Milan; Eiskjær, Hans: Validation of a semi-automatic software for optical coherence tomography-analysis in heart transplanted patients, The International Journal of Cardiovascular Imaging, 39, 2, 257-268, 2023, Springer Netherlands Dordrecht

216. Zaman, Fahim Ahmed; Roy, Tarun Kanti; Sonka, Milan; Wu, Xiaodong: Patch-wise 3D Segmentation Quality Assessment Combining Reconstruction and Regression Networks, 2023, TechRxiv
217. Zaman, Fahim Ahmed; Zhang, Lichun; Zhang, Honghai; Sonka, Milan; Wu, Xiaodong: Segmentation Quality Assessment by Automated Detection of Erroneous Surface Regions in Medical Images, 2023, TechRxiv
218. Mayerova, Lucie; Chaloupka, Anna; Wohlfahrt, Peter; Hubacek, Jaroslav Alois; Bedanova, Helena; Zhi, CHEN; Kautzner, Josef; Melenovsky, Vojtech; Malek, Ivan; Tomasek, Ales: Role of genetics in the development of cardiac allograft vasculopathy., Bratislava Medical Journal/Bratislavske Lekarske Listy, 124, 3, 2023
219. Zhang, Lichun; Guo, Zhihui; Zhang, Honghai; van der Plas, Ellen; Kosciak, Timothy R; Nopoulos, Peggy C; Sonka, Milan: Assisted annotation in Deep LOGISMOS: Simultaneous multi-compartment 3D MRI segmentation of calf muscles, Medical Physics, 2023
220. Lopez, Josue A; Yamamoto, Annamarie; Vecchi, Joseph T; Hagen, Jussara; Lee, Kyungmoo; Sonka, Milan; Hansen, Marlan R; Lee, Amy: Caldesmon represses neurite regeneration and growth in dorsal root ganglion neurons, Scientific Reports - Nature Publishing Group, 13, 1, 2608, 2023
221. Ensley, J Eric; Tachau, Katherine H; Walsh, Susan A; Zhang, Honghai; Simon, Giselle; Moser, Laura; Atha, Jarron; Dilley, Paul; Hoffman, Eric A; Sonka, Milan: Using computed tomography to recover hidden medieval fragments beneath early modern leather bindings, first results, Heritage Science, 11, 1, 82, 2023, Springer International Publishing Cham
222. Statz, Giselle M; Evans, Aron Z; Johnston, Samuel L; Adhaduk, Mehul; Mudireddy, Avinash R; Sonka, Milan; Lee, Sangil; Barsotti, E John; Ricci, Fabrizio; Dipaola, Franca: Can Artificial Intelligence Enhance Syncope Management? J American College of Cardiology, Advances, 2, 3, 100323, 2023
223. Zhang, Lichun; Chen, Zhi; Zhang, Honghai; Zaman, Fahim Ahmed; Wahle, Andreas; Wu, Xiaodong; Sonka, Milan: Efficient Deep-Learning-Assisted Annotation for Medical Image Segmentation, 2023, TechRxiv
224. Hyer, Daniel E; Caster, Joseph; Smith, Blake; St-Aubin, Joel; Snyder, Jeffrey; Shepard, Andrew; Zhang, Honghai; Mullan, Sean; Geoghegan, Theodore; George, Benjamin; James Byrne, Mark Smith, John M Buatti, Milan Sonka: A Technique to Enable Efficient Adaptive Radiation Therapy: Automated Contouring of Prostate and Adjacent Organs, Advances in radiation oncology, 101336, 2023
225. Bathla, Girish; Dhruva, Durjoy Deb; Soni, Neetu; Liu, Yanan; Larson, Nicholas B; Kassmeyer, Blake A; Mohan, Suyash; Roberts-Wolfe, Douglas; Rathore, Saima; Lee, Nam H, Honghai Zhang, Milan Sonka, Sarv Priya: AI-based Classification of Three Common Malignant Tumors in Neuro-oncology: A Multi-Institutional Comparison of Machine Learning and Deep Learning Methods, Journal of Neuroradiology, 2023
226. Vecchi, Joseph T; Mullan, Sean; Lopez, Josue A; Rhomberg, Madeline; Yamamoto, Annamarie; Hallam, Annabelle; Lee, Amy; Sonka, Milan; Hansen, Marlan R: Sensitivity of CNN image analysis to multifaceted measurements of neurite growth, BMC Bioinformatics, 24, 1, 25-Jan, 2023, BioMed Central
227. Bathla, Girish; Dhruva, Durjoy Deb; Liu, Yanan; Le, Nam H; Soni, Neetu; Zhang, Honghai; Mohan, Suyash; Roberts-Wolfe, Douglas; Rathore, Saima; Sonka, Milan, Differentiation Between Glioblastoma and Metastatic Disease on Conventional MRI Imaging Using 3D-Convolutional Neural Networks: Model Development and Validation, Academic Radiology, 2023, Elsevier

228. Le, Nam H; Sonka, Milan; Toor, Fatima; A Quantum Optimization Method for Geometric Constrained Image Segmentation, arXiv preprint arXiv:2310.20154,2023
229. Peng, Yaopeng; Sonka, Milan; Chen, Danny Z; U-Net v2: Rethinking the Skip Connections of U-Net for Medical Image Segmentation, arXiv preprint arXiv:2311.17791, 2023
230. Zaman, Fahim Ahmed; Jacob, Mathews; Chang, Amanda; Liu, Kan; Sonka, Milan; Wu, Xiaodong; ”, Surf-CDM: Score-Based Surface Cold-Diffusion Model For Medical Image Segmentation, arXiv preprint arXiv:2312.12649, 2023
231. Zaman, Fahim Ahmed; Wu, Xiaodong; Xu, Weiyu; Sonka, Milan; Mudumbai, Raghuraman; Trust, but Verify: Robust Image Segmentation using Deep Learning, arXiv preprint arXiv:2310.16999, 2023
232. Fahim Ahmed Zaman, Lichun Zhang, Honghai Zhang, Milan Sonka, Xiaodong Wu (2023), Segmentation quality assessment by automated detection of erroneous surface regions in medical images. Computers in biology and medicine, 164. <https://iro.uiowa.edu/esploro/outputs/journalArticle/Segmentation-quality-assessmentby-automated-detection/9984449860202771>
233. Sean Mullan, Milan Sonka (2023), Kernel-weighted contribution: a method of visual attribution for 3D deep learning segmentation in medical imaging. Journal of medical imaging (Bellingham, Wash.), 10 (5). <https://iro.uiowa.edu/esploro/outputs/journalArticle/Kernel-weighted-contribution-a-method-of-visual/998446559302771>
234. Fahim Ahmed Zaman, Tarun Kanti Roy, Milan Sonka, Xiaodong Wu (2023), Patch-wise 3D segmentation quality assessment combining reconstruction and regression networks. Journal of medical imaging (Bellingham, Wash.), 10 (5). <https://iro.uiowa.edu/esploro/outputs/journalArticle/Patch-wise-3D-segmentationquality-assessment-combining/9984463080202771>

### 1.2.2 Conference papers with full review

1. Duta, N., Sonka, M.: Segmentation and Interpretation of MR Brain Images using an Improved Knowledge-Based Active Shape Model, (paper accepted after a full review), pp. 375–380, Information Processing in Medical Imaging, Springer, 1997.
2. Duta, N., Sonka, M.: An Improved Active Shape Model: Handling Occlusion and Outliers, (paper accepted after a full review), International Conference on Image Analysis and Processing ICIAP’97, A. del Bimbo editor, Lecture Notes in Computer Science, Vol. 1310, Springer Verlag, pp. 398–405, 1997.
3. Sonka, M., Dove E. L., Collins, S.M.: Collaborative Learning Approaches to Image Processing Education at the University of Iowa. IEEE Computer Society Workshop on Undergraduate Education and Image Computation, (paper accepted after a full review), Electronic Proceedings located at <http://marathon.csee.usf.edu/education.html>, 1997.
4. Brejl, M., Sonka, M.: Edge-Based Image Segmentation: Machine Learning from Examples, Proceedings of the IEEE International Joint Conference on Neural Networks, (paper accepted after a full review), pp. 814–819, 1998.
5. A. Wahle, G. P. M. Prause, S. C. DeJong, M. Sonka, 3-D Fusion of Biplane Angiography and Intravascular Ultrasound for Accurate Visualization and Volumetry, (paper accepted after a full review). Proc. MICCAI ’98, First International Conference on Medical Image Computing and Computer-Assisted Intervention, Springer, Berlin/New York, pp. 110–118, 1998.

6. B. Lelieveldt, M. Sonka, L. Bolinger, T. Scholz, H. Kayser, R. van der Geest, J.H.C. Reiber: Anatomical Modeling with Fuzzy Implicit Surface Templates: Application to Automated Localization of the Heart and Lung Surfaces in Thoracic MR Images, (paper accepted after a full review), pp. 400–405, *Information Processing in Medical Imaging*, Springer, 1999.
7. N. Duta, M. Sonka, A. K Jain: Learning Shape Models from Examples using Automatic Shape Clustering and Procrustes Analysis, (paper accepted after a full review), pp. 370–375, *Information Processing in Medical Imaging*, Springer, 1999.
8. B.P.F. Lelieveldt, S.C. Mitchell, J.G. Bosch, R.J. van der Geest, M.Sonka, J.H.C. Reiber: Time-continuous segmentation of cardiac image sequences using Active Appearance Motion Models (paper accepted after a full review), *Information Processing in Medical Imaging – Lecture Notes in Computer Science*, vol. 2082 pp.446-452, Springer, 2001.
9. J Tschirren, K Palagyi, J M Reinhardt, E A Hoffman, M Sonka: Segmentation, skeletonization, and branchpoint matching – A fully automated quantitative evaluation of human intrathoracic air- way trees (paper accepted after a full review), *Medical Image Computing and Computer-Assisted Intervention - MICCAI 2002*, Berlin, Springer, 2002, 12–19.
10. H Kitaoka, Y Park, J Tschirren, J M Reinhardt, M Sonka, G McLennan, E A Hoffman: Automated nomenclature labeling of the bronchial tree in 3D-CT lung images (paper accepted after a full review), *Medical Image Computing and Computer-Assisted Intervention - MICCAI 2002*, Berlin, Springer, 2002, 1–11.
11. C.R. Oost, B.P.F. Lelieveldt, M. Uzumcu, H. Lamb, J.H.C. Reiber, M.Sonka, Multi-View Active Appearance Models: Application to X-ray LV Angiography and Cardiac MRI (paper accepted after a full review), *Information Processing in Medical Imaging – Lecture Notes in Computer Science*, vol. 2732, pp.234-245, Springer, 2003.
12. M. Uzumcu, A.F. Frangi, M.Sonka, J.H.C. Reiber, B.P.F. Lelieveldt, ICA vs. PCA Active Appearance Models: Application to cardiac MR segmentation (paper accepted after a full review), *Medical Image Computing and Computer-Assisted Intervention 2003 – Lecture Notes in Computer Science*, vol. 2878, pp. 451-458, Springer, 2003.
13. K. Palagyi, J. Tschirren, M. Sonka: Quantitative Analysis of Intrathoracic Airway Trees: Methods and Validation (paper accepted after a full review), *Information Processing in Medical Imaging – Lecture Notes in Computer Science*, vol. 2732, p. 222-233, Springer, 2003.
14. K Li, X Wu, D Z Chen, M. Sonka: Globally Optimal Segmentation of Interacting Surfaces with Geometric Constraints, *Proc. IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR)*, (paper accepted after a full review), p. 394–399, IEEE, 2004.
15. K. Palagyi, J. Tschirren, E.A. Hoffman, M. Sonka: Assessment of intrathoracic airway trees: Methods and in vivo validation (paper accepted after a full review), *Computer Vision and Mathematical Methods in Medical and Biomedical Image Analysis – Lecture Notes in Computer Science*, vol. 3117, p. 341–352, Springer, 2004.
16. Wahle A, Lopez JJ, Olszewski ME, Vigmostad SC, Chandran KB, Rossen JD, Sonka M: Analysis of the Interdependencies among Plaque Development, Vessel Curvature, and Wall Shear Stress in Coronary Arteries. FIMH '05, Third International Conference on Functional Imaging and Modeling of the Heart, Frangi AF, Radeva PI, Santos A, Hernandez M (eds), Barcelona, *Lecture Notes in Computer Science*, Springer 2005, pages 12-22. (paper accepted after a full review)

17. E Oost, G Koning, M Sonka, J. H. C. Reiber, B. P. F. Lelieveldt: Automated Segmentation of X-ray Left Ventricular Angiograms Using Multi-View Active Appearance Models and Dynamic Programming. FIMH '05, Third International Conference on Functional Imaging and Modeling of the Heart, Frangi AF, Radeva PI, Santos A, Hernandez M (eds), Barcelona, Lecture Notes in Computer Science, Springer 2005, pages 23-32. (paper accepted after a full review)
18. R Beichel, H Bischof, F Leberl, M Sonka: Robust Active Appearance Model Matching. Information Processing in Medical Imaging – Lecture Notes in Computer Science, Springer 2005: p. 114-125. (paper accepted after a full review)
19. K Li, S Millington, X Wu, D. Z. Chen, M Sonka: Simultaneous Segmentation of Multiple Closed Surfaces Using Optimal Graph Searching. Information Processing in Medical Imaging – Lecture Notes in Computer Science, Springer 2005: p. 406-417. (paper accepted after a full review)
20. X Wu, D. Z. Chen, K. Li, M. Sonka: The Layered Net Surface Problems in Discrete Geometry and Medical Image Segmentation. Proc. of ISAAC 2005: p. 17-27. (paper accepted after a full review)
21. X Zhang, G McLennan, E. A. Hoffman, M Sonka: Automated Detection of Small-Size Pulmonary Nodules Based on Helical CT Images. Information Processing in Medical Imaging – Lecture Notes in Computer Science, Springer 2005: p. 664-676. (paper accepted after a full review)
22. F Yang, M. A. Mackey, F Ianzini, G Gallardo, M Sonka: Cell Segmentation, Tracking, and Mitosis Detection Using Temporal Context. Proceedings of MICCAI 2005: p. 302-309. (paper accepted after a full review)
23. M Sonka, R Beichel, A Bornik, B Reitinger, E Sorantin, G Werkgartner: Computer Aided Liver Surgery Planning: An Augmented Reality Approach. Multidimensional Image Processing, Analysis, and Display. RSNA Education, p. 227-236, 2005. (paper accepted after a full review)
24. Zhao F, Zhang H, Wahle A, Scholz T D, Sonka M: Automated 4-D Segmentation of Aortic Magnetic Resonance Images. In: Chantler M J, Trucco E, Fisher R B (eds): British Machine Vision Conference 2006. BMVA, Worcs, Volume 1, Page 247-256, 2006. (paper accepted after a full review)
25. Hansen M S, Zhao F, Zhang H, Walker N E, Wahle A, Scholz T D, Sonka M: Detection of Connective Tissue Disorders from 3-D Aortic MR Images using Independent Component Analysis. In: Beichel R, Sonka M (eds): Computer Vision Approaches to Medical Image Analysis (CVAMIA06). Second International Workshop at the 9th European Conference on Computer Vision, Graz, Lecture Notes in Computer Science, Springer, Volume 4241, Page 13-24, 2006, (paper accepted after a full review).
26. Hansen M S, Zhao F, Zhang H, Ersboell B K, Wahle A, Scholz T D, Sonka M: Diagnosis of Connective Tissue Disorders based on Independent Component Analysis of Aortic Shape and Motion from 4-D MR Images. In: Unal G, Kakadiaris I, Slabaugh G, Tannenbaum A (eds): The 1st International Workshop on Computer Vision for Intravascular and Intracardiac Imaging. Samfundslitteratur, Frederiksberg, Page 154-161, 2006, (paper accepted after a full review).
27. M. Haeker, M. Abramoff, R. Kardon, M. Sonka: Segmentation of the Surfaces of the Retinal Layer from OCT Images. In: Medical Image Computing and Computer-Assisted Intervention - MICCAI 2006, R. Larsen, M. Nielsen, J. Sporring (eds.), Springer, pp. 800-807, 2006, (paper accepted after a full review).
28. Wahle A, Gualano S, De A, Everett M, Olszewski M E, Vigmostad S C, Cinar S, Lee K, Sonka M, Lopez J J: Correlation of Peri-Procedural Cardiac Enzyme Release with Atherosclerotic Plaque Burden using 3-D Fusion of Intravascular Ultrasound and Angiography. In: Unal G, Kakadiaris I, Slabaugh G, Tannenbaum A (eds): The 1st International Workshop on Computer Vision for

- Intravascular and Intracardiac Imaging. Samfundslitteratur, Frederiksberg, Page 90-97, 2006, (paper accepted after a full review).
29. M Haeker, X Wu, M Abramoff, R Kardon, M. Sonka: Incorporation of regional information in optimal 3-D graph search with application for intraretinal layer segmentation of optical coherence tomography images. In: Information Processing in Medical Imaging 2007, Lecture Notes in Computer Science LNCS 4584, 607–618, Springer Verlag, 2007, (paper accepted after a full review).
  30. M. Haeker, M. D. Abramoff, X. Wu, R. Kardon, and M. Sonka, Use of varying constraints in optimal 3-D graph search for segmentation of macular optical coherence tomography images. In Proceedings of the 10th International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI 2007), Lecture Notes in Computer Science, Part I Springer, 244–251, 2007, (paper accepted after a full review).
  31. X. Zhang, J. Stockel, M. Wolf, P. Cathier, G. McLennan, E. A. Hoffman, and M. Sonka: A New Method for Spherical Object Detection and Its Application to Computer Aided Detection of Pulmonary Nodules in CT Images. In Proceedings of the 10th International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI 2007), Lecture Notes in Computer Science - Part I, Springer, 842–849, 2007, (paper accepted after a full review).
  32. Dou, X., Wu, X., Wahle, A., and Sonka, M., Globally Optimal Surface Segmentation Using Regional Properties of Segmented Objects, IEEE Conf. on Computer Vision and Pattern Recognition (CVPR), Anchorage, AL, 10.1109/CVPR.2008.4587429, 2008.
  33. Yin, Y., Zhang, X., Sonka, M.: Optimal Multi-Object Multi-Surface Graph Search Segmentation: Full-Joint Cartilage Delineation in 3D. Proceedings of Medical Image Understanding and Analysis 2008, Editors: S. McKenna and J. Hesse, p. 104-108, 2008, (paper accepted after a full review).
  34. X. Liu, D.Z. Chen, X. Wu, and M. Sonka, Optimal Graph-based Segmentation of 3D Pulmonary Airway and Vascular Trees across Bifurcations, Proc. of the 1st Annual Workshop on Pulmonary Image Analysis, at the 11th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), New York City, 2008, pp. 103-111, (paper accepted after a full review).
  35. R. Downe, A. Wahle, T. Kovarnik, J. Horak, H. Skalicka, J. L. Lopez, M. Sonka: Segmentation of intravascular ultrasound images using graph search and a novel cost function. In G. Unal, I. A. Kakadiaris, N. Navab, and M. Sonka, editors, The 2nd International Workshop on Computer Vision for Intravascular and Intracardiac Imaging (MICCAI 2008), pages 71-79, Istanbul, 2008. Sabanci University. (paper accepted after a full review)
  36. Q. Song, X. Wu, Y. Liu, M. Smith, J. M. Buatti, M. Sonka: Optimal Graph Search Segmentation Using Arc-Weighted Graph for Simultaneous Surface Detection of Bladder and Prostate. MICCAI (1) 2009: 827-835 (paper accepted after a full review).
  37. D. Han, X. Wu, M. Sonka: Optimal Multiple Surfaces Searching for Video/Image Resizing - A Graph-Theoretic Approach. Proceedings of 2009 ICCV, Kyoto Japan (paper accepted after a full review).
  38. Y. Yin, Q. Song, M. Sonka: Electric Field Theory Motivated Graph Construction for Optimal Medical Image Segmentation. GbRPR 2009: 334-342 (paper accepted after a full review).
  39. Song Q, Liu Y, Liu Y, Saha PK, Sonka M, Wu X.: Graph search with appearance and shape information for 3-D prostate and bladder segmentation. Med Image Comput Comput Assist Interv. 2010;13(Pt 3):172-80 (paper accepted after a full review).

40. Z Hu, M Niemeijer, M D Abramoff, K Lee and M K Garvin: Automated Segmentation of 3-D Spectral OCT Retinal Blood Vessels by Neural Canal Opening False Positive Suppression. Medical Image Computing and Computer-Assisted Intervention - MICCAI 2010, LNCS Volume 6363, 33-40, Springer, 2010 (paper accepted after a full review).
41. Q. Song, X. Wu, Y. Liu, M. K. Garvin, and M. Sonka, Simultaneous searching of globally optimal interacting surfaces with convex shape priors. in CVPR 2010: IEEE Conference on Computer Vision and Pattern Recognition, pp. 2879-2886, 2010 (paper accepted after a full review).
42. Han D, Bayouth J, Song Q, Bhatia S, Sonka M, Wu X. "Feature Guided Motion Artifact Reduction with Structure-Awareness in 4D CT Images." Proc IEEE Comp Soc Conf Comput Vis Pattern Recognit 2011:1057-1064.
43. Xu L, Stojkovic B, Zhu Y, Song Q, Wu X, Sonka M, Xu J. "Efficient Algorithms for Segmenting Globally Optimal and Smooth Multi-Surfaces." Lect Notes Comput Sci 6801:208-220.
44. Han D, Bayouth J, Song Q, Taurani A, Sonka M, Buatti J, Wu X. "Globally optimal tumor segmentation in PET-CT images: a graph-based co-segmentation method." Inf Process Med Imaging. 2011;22:245-56.
45. Song Q, Chen M, Bai J, Sonka M, Wu X. "Surface-region context in optimal multi-object graph-based segmentation: robust delineation of pulmonary tumors." Inf Process Med Imaging. 2011;22:61-72.
46. Gibson, M., Han, D., Sonka, M., and Wu, X., "Maximum Weight Digital Regions Decomposable into Digital Star-Shaped Regions," Lecture Notes in Computer Science, Vol. 7074, Springer, Proc. of the 22nd International Symposium on Algorithms and Computation (ISAAC), Yokohama, Japan, December 5-8, 2011, pp. 724-733.
47. Xu, L., Stojkovic, B., Ding, H., Song, Q., Wu, X., Sonka, M., and Xu, J., "Faster Segmentation Algorithm for Optical Coherence Tomography Images with Guaranteed Smoothness," Lecture Notes in Computer Science, Vol. 7009, Springer, Proc. of the 2nd Int. Workshop on Machine Learning in Medical Imaging, Held in Conjunction with the 13th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), September 2011, Toronto, Canada, pp. 308-316.
48. R. Downe, A. Wahle, J. Garvin, T. Kovarnik, J. Horak, J. Lopez and M. Sonka: Identification and 3-D modeling of coronary branches in intravascular ultrasound, MICCAI - CVII (Computer Vision for Intravascular Imaging) Workshop, Toronto, CA 2011.
49. Oguz, I; Sonka, M; Robust Cortical Thickness Measurement with LOGISMOS-B. Medical Image Computing and Computer-Assisted Intervention-MICCAI, 722-730, 2014, Springer International Publishing
50. Zhang, Ling; Downe, RW; Chen, Zhi; Sun, Shanhui; Masiarov, T; Kovarnik, Tomas; Lopez, John; Sonka, Milan; Wahle, Andreas; Side-branch guided registration of intravascular ultrasound pullbacks in coronary arteries MICCAI Workshop in Computing and Visualization for IntraVascular Imaging and Computer Assisted Stenting (CVII-STENT) 44-51 2014
51. Zhang, Ling; Wahle, Andreas; Chen, Zhi; Lopez, John; Kovarnik, Tomas; Sonka, Milan; Prospective prediction of thin-cap fibroatheromas from baseline virtual histology intravascular ultrasound data International Conference on Medical Image Computing and Computer-Assisted Intervention 603-610 2015
52. Isack, Hossam; Veksler, Olga; Sonka, Milan; Boykov, Yuri; Hedgehog shape priors for multi-object segmentation Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition 2434-2442 2016

53. Oguz, Ipek; Kashyap, Satyananda; Wang, Hongzhi; Yushkevich, Paul; Sonka, Milan; Globally Optimal Label Fusion with Shape Priors International Conference on Medical Image Computing and Computer-Assisted Intervention 538-546 2016
54. Kashyap, Satyananda; Oguz, Ipek; Zhang, Honghai; Sonka, Milan; Automated segmentation of knee MRI using hierarchical classifiers and just enough interaction based learning: Data from osteoarthritis initiative International Conference on Medical Image Computing and Computer-Assisted Intervention 344-351 2016
55. Isack, H., Veksler, O., Oguz, I., Sonka, M., Boykov, Y. (2017). Efficient optimization for hierarchically-structured interacting segments (HINTS). Proc. of CVPR.
56. Lee, K., Zhang, H., Wahle, A., Abramoff, M. D., Sonka, M. (2017). Multi-layer 3D Simultaneous Retinal OCT Layer Segmentation: Just-Enough Interaction for Routine Clinical Use. European Congress on Computational Methods in Applied Sciences and Engineering (pp. 862-871). VipImage.
57. Guo, Zhihui; Bai, Junjie; Lu, Yi; Wang, Xin; Cao, Kunlin; Song, Qi; Sonka, Milan; Yin, Youbing; DeepCenterline: A multi-task fully convolutional network for centerline extraction. International Conference on Information Processing in Medical Imaging, Proceedings LNCS 11492, 441-453, Springer, 2019
58. Zhu, Dixian; Wang, Bokun; Chen, Zhi; Wang, Yaxing; Sonka, Milan; Wu, Xiaodong; Yang, Tianbao: Provable Multi-instance Deep AUC Maximization with Stochastic Pooling, International Conference on Machine Learning, 43205-43227, 2023
59. Peng, Yaopeng; Wang, Hongxiao; Sonka, Milan; Chen, Danny Z; PHG-Net: Persistent Homology Guided Medical Image Classification Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision, 7583-7592, 2024

**1.3 Articles, chapters, abstracts, and summaries in research monographs, conference/symposium/congress proceedings, handbooks, etc. (Generally most articles published in the cited media. Also papers printed by a society as a preprint/reprint and not published in any other form.)**

Book chapters:

1. Sonka, M. and Collins, S.M.: Automated Analysis of Coronary Angiograms. In C.T.Leondes, editor, Medical Imaging Systems, Techniques and Applications, Gordon and Breach, pp. 147–181, 1997.
2. Sonka, M., McKay, C.R., and von Birgelen, C: Computer Analysis of Intravascular Ultrasound Images. In C.T.Leondes, editor, Medical Imaging Techniques and Applications, Gordon and Breach, pp. 183–226, 1997.
3. Sonka, M., Zhang, X.: Assessment of Plaque Composition using Intravascular Ultrasound. In: What's New in Cardiovascular Imaging, J. H. C. Reiber editor, Kluwer Academic Publisher, Dordrecht, 1998, pp. 183–195.
4. Dijkstra, J., Wahle, A., Koning, G., Reiber, J.H.C., Sonka, M.: Quantitative Coronary Ultrasound: State of the Art. In: What's New in Cardiovascular Imaging, J. H. C. Reiber editor, Kluwer Academic Publisher, Dordrecht, 1998, pp. 79–93.
5. J.H.C. Reiber, G. Koning, J. Dijkstra, A. Wahle, B. Goedhart, F.H. Sheehan, M. Sonka: Angiography and Intravascular Ultrasound. In: Sonka, M., Fitzpatrick, J.M.: Handbook of Medical Imaging Volume 2 – Medical Image Processing and Analysis, SPIE, 2000, pp. 711–808.

6. M. Sonka, W. Liang, R.M. Stefancik, A. Stolpen: Vascular Imaging and Analysis. In: Sonka, M., Fitzpatrick, J.M.: Handbook of Medical Imaging Volume 2 – Medical Image Processing and Analysis, SPIE, 2000, pp. 808–914.
7. Sonka, M.: Genetic Image Interpretation. In C.T. Leondes, editor, Expert Systems, Academic Press, 2002, Vol. 3, pp. 639–659.
8. M Sonka, D R Thedens, B P F Lelieveldt, S C Mitchell, R J Van der Geest, J H C Reiber: Cardiovascular MR Image Analysis. In: Computer Vision Beyond the Visible Spectrum, B Bhanu and I Pavlidis eds., Springer Verlag London, 2005, pp. 193-240.
9. Wahle A, Sonka M: Coronary Plaque Analysis by Multimodality Fusion. Plaque Imaging: Pixel to Molecular Level, Suri JS, Yuan C, Wilson DL, Laxminarayan S (eds), Studies in Health, Technology and Informatics, IOS Press, Volume 113, Pages 321-359, 2005.
10. B P F Lelieveldt, A Frangi, S Mitchell, H van Assen, S Ordas, J H C Reiber, and M Sonka: 3D Active Shape and Appearance Models in Cardiac Image Analysis. In: Handbook of Mathematical Models in Computer Vision, N. Paragios, Y. Chen, and O. Faugeras eds., Springer, 2006, pp. 471–486.
11. Yang, F., Sonka, M., J. S. Suri: Volumetric Segmentation using Shape Models in Level Set Framework. In: Deformable Models: Biomedical and Clinical Applications, J. S. Suri and A. Farag eds, Springer, 2006.
12. E. Sorantin, G. Werkgartner, R. Beichel, A. Bornik, B. Reitingner, N. Popovic, and M. Sonka. Image Processing in Radiology, Current Applications, chapter Virtual Liver Surgery Planning. Medical Radiology. Springer Berlin Heidelberg, 2008. ISBN: 978-3-540-25915-2.
13. A Wahle, H Zhang, F Zhao, K Lee, R W Downe, M E Olszewski, S Ukil, J Tschirren, H Shikata, M Sonka: Three-dimensional and Four-dimensional Cardiopulmonary Image Analysis. Image Based Computational Modeling of the Human Circulatory and Pulmonary Systems. Eds.: K. Chandran, H S Udaykumar, J M Reinhardt, pp.: 35–95, Springer 2011.
14. T. Kovarnik, A. Wahle, R.W. Downe and M. Sonka: IVUS Role in Studies Assessing Atherosclerosis Development, In: Intravascular Ultrasound, Y. Honda editor, InTech, 2012.
15. X Wu, M K Garvin, M Sonka, Optimal Simultaneous Multi-Surface and Multi-Object Image Segmentation, O Lezoray and L Grady Editors, In: "Image Processing and Analyzing with Graphs: Theory and Practice", CRC Press, pp. 265–304, 2012.
16. Zhang, Honghai; Lee, Kyungmoo; Chen, Zhi; Kashyap, Satyananda; Sonka, Milan; LOGISMOS-JEI: Segmentation using optimal graph search and just-enough interaction Handbook of Medical Image Computing and Computer Assisted Intervention. 249-272, Academic Press, 2020
17. Andreas Wahle, Ling Zhang, Zhi Chen, Honghai Zhang, John J Lopez, Tomas Kovarnik, Milan Sonka (2020), Chapter 8 - Quantitative Assessment and Prediction of Coronary Plaque Development Using Serial Intravascular Ultrasound and Virtual Histology. Intravascular Ultrasound, 121-140.  
<https://iro.uiowa.edu/esploro/outputs/bookChapter/Chapter-8—Quantitative-Assessment-and/9984186913402>
18. Mullan, Sean; Zhang, Lichun; Zhang, Honghai; Sonka, Milan; Deep learning medical image segmentation, In: Medical Image Analysis, 475-500, 2024, Academic Press

#### Conference papers:

1. Sonka, M.: Texture Recognition in Meteorology – Využití metod rozpoznávání textur při zpracování družicových meteorologických snímků. In: Technická kybernetika a biokybernetika, Temešvár, ČSVTS FEL ČVUT, 1981 (in Czech).

2. Sonka, M.: Texture in Biomedical Images – Texturní přístup k určování stejnorodých oblastí obrazu. In: Biokybernetika, Praha, ČSVTS ČVUT FEL, 1982 (in Czech).
3. Sonka, M.: Texture Recognition Methods – Metody rozpoznávání textur a jejich aplikace. In: Metody rozpoznávání obrazů a jejich aplikace v diagnostice, robotice a v dalších oblastech, Praha, ČSVTS FEL ČVUT, 1982 (in Czech).
4. Sonka, M.: Primitive Texture Extraction Methods – Metody extrakce primitiv z texturních obrazů. In: Sborník referátů celostátního sjezdu biomedicínského inženýrství BMI '83, Mariánské Lázně, 1983 (in Czech).
5. Sonka, M., Hlaváč, V.: Character Recognition – Zpracování textu vstupujícího TV kamerou. In: MOP '84, ČSVTS Žilina 1984 (in Czech).
6. Sonka, M.: Texture Analysis – Metody texturní analýzy. In: Biosignál '84, ČSVTS FE VUT Brno, 1984 (in Czech).
7. Hlaváč, V., Sonka, M.: Image Processing Software – Programové vybavení rastrového optického pracoviště. In: Biosignál '84, ČSVTS FE VUT Brno, 1984 (abstrakt) (in Czech).
8. Sonka, M., Hlaváč, V.: Image Processing – Zpracování obrazové informace. In: Automatizační technika ve výuce a výzkumu, ČSVTS FE VUT Brno, 1984 (in Czech).
9. Sonka, M., Hlaváč, V.: Character Recognition – Rozpoznávání znaků vstupujících TV kamerou. In: SOFSEM '84, Liptovský Ján, UJEP Brno, 1984 (in Czech).
10. Hlaváč, V., Sonka, M.: Interactive Image Processing System – Interakční systém předzpracování obrazů. In: DZO '85, ČSVTS Tesla VÚST, Praha, 1985 (in Czech).
11. Sonka, M.: Digital Texture Processing – Digitální zpracování obrazových textur a jejich rozpoznávání. In: DZO '85, ČSVTS Tesla VÚST, Praha, 1985 (in Czech).
12. Hlaváč, V., Sonka, M.: Image Analysis Software – Software pro zpracování obrazové informace. In: Využití počítačů v lékařství a zdravotnictví, DT ČSVTS Ostrava, 1985 (in Czech).
13. Hlaváč, V., Sonka, M.: Preprocessing of Digitized IC Masks – Předzpracování digitalizovaných snímků masek IO. In: Návrh obvodů počítačem, ČSVTS Tesla VÚST, Praha, 1985 (in Czech).
14. Sonka, M., Hlaváč, V.: Computer Vision – Počítačové vidění. In: Umělá inteligence a expertní systémy, ČSVTS FEL ČVUT, Praha, 1985 (in Czech).
15. Sonka, M., Hlaváč, V.: Image Processing in Technical Diagnostics – Zpracování vizuální informace v technické diagnostice. In: Technická diagnostika, ČSVTS FEL ČVUT, Praha, 1985 (in Czech).
16. Sonka, M., Hlaváč, V.: Object Extraction and Classification in Assembly Lines – Vnímání vizuální informace o výrobní scéně - extrakce objektů, jejich popis a klasifikace. In: Vnímání prostředí robotem, DT ČSVTS Č. Budějovice, 1985 (in Czech).
17. Hlaváč, V., Sonka, M., Woska, J., Matoušek, L.: Kirlian Phenomenon and its Image Analysis – Informativnost v digitálních snímcích Kirliánova jevu. In: III. celoustavní konf. VÚPs, Praha, 1986 (in Czech).
18. Sonka, M., Hlaváč, V.: Image Preprocessing – Předzpracování obrazů. In Monograph [2] (in Czech).
19. Hlaváč, V., Sonka, M.: Image Segmentation – Segmentování a popis obrazů. In: Monograph [2] (in Czech).

20. Sonka, M., Hlaváč, V.: Texture Description – Textury a jejich popis. In: Monograph [2] (in Czech).
21. Hlaváč, V., Sonka, M.: Dynamic Image Analysis – Analýza snímků proměnných v čase. In: Monograph [2] (in Czech).
22. Sonka, M., Hlaváč, V.: Statistical Pattern Recognition Rozpoznávání příznakově popsanych předmětů. In: Monograph [2] (in Czech).
23. Hlaváč, V., Sonka, M.: Image Processing at the Czech Technical University – Zpracování obrazové informace na katedře řídicí techniky ČVUT FEL, In: Monograph [2] (in Czech).
24. Sonka, M., Hlaváč, V.: Image Processing Software – Programové vybavení univerzálního systému pro zpracování obrazů. In: DZO '86, ČSVTS Tesla VÚST, Praha, 1986 (in Czech).
25. Hlaváč, V., Sonka, M.: Minicomputer Image Processing Software – Řídicí program IMG pro práci se snímky na minipočítači. In: DZO '86, ČSVTS Tesla VÚST, Praha, 1986 (in Czech).
26. Hlaváč, V., Sonka, M.: Raster Image Processing System – Univerzální systém pro práci s rastrovými snímky. In: Aplikace umělé inteligence AI '86, ČSVTS ÚÍRK, Praha, 1986 (in Czech).
27. Matoušek, L., Hlaváč, V., Sonka, M.: Kirlian Phenomenon in Psychiatry – Kirliánův jev v psychiatrii a jeho analýza metodami digitálního zpracování obrazů. In: Biosignál '86, ČSVTS FE VUT Brno, 1986 (in Czech).
28. Hlaváč, V., Sonka, M.: Image Analysis System – Ucelený soubor programů pro zpracování obrazové informace počítačem. In: Biosignál '86, ČSVTS FE VUT Brno, 1986 (in Czech).
29. Hlaváč, V., Mařík, R., Sonka, M.: Image Analysis System IMG – Současný stav rozvoje systému IMG pro zpracování a vyhodnocování obrazové informace. In: DZO '87, ČSVTS Tesla VÚST, Praha, 1987 (in Czech).
30. Sonka, M., Hlaváč, V.: Bottle Counting System – Bezdotykové snímání počtu lahví v plnicí lince. In: DZO '87, ČSVTS Tesla VÚST, Praha, 1987 (in Czech).
31. Sonka, M., Hlaváč, V.: Digital Image Processing Approaches – Programové prostředky pro zpracování vizuální informace. In: Adaptivne robotické systémy, DT Banská Bystrica, 1987 (in Czech).
32. Hlaváč, V., Sonka, M.: Image Processing System of DIGITES 2C, Design – Návrh programového vybavení pro DIGITES 2C. In: Vnímání prostředí robotem, DT ČSVTS Pardubice, 1987 (in Czech).
33. Sonka, M., Hlaváč, V.: Image-based Bottle Counting System – Bezdotykové snímání počtu lahví v plnicí lince. In: Vnímání prostředí robotem, DT ČSVTS Pardubice, 1987 (in Czech).
34. Hlaváč, V., Sonka, M.: TV Camera as an Input in CAD Systems – Vstup vizuální informace do grafických systémů TV kamerou. In: SOFSEM '87, UJEP Brno, 1987 (in Czech).
35. Hlaváč, V., Sonka, M.: Raster Image Input in CAD Systems – Vstup rastrové vizuální informace do grafických systémů. In: DZO '88, ČSVTS Tesla VÚST, Praha, 1988 (in Czech).
36. Hlaváč, V., Holý, pp., Sonka, M.: Image Analysis System for Personal Computers – Programový systém IMG pro zpracování a vyhodnocování obrazové informace na IBM PC. In: DZO '88, ČSVTS Tesla VÚST, Praha, 1988 (in Czech).
37. Červenka, V., Hlaváč, V., Charvát, K., Sonka, M.: Image Analysis – Zpracování vizuální informace počítačem. In: Sborník hlavních referátů SOFSEM '88, UJEP Brno, 1988,

38. Sonka, M.: Hybrid Texture Recognition Method. In: IMYCS'84, Jednota slov. mat. a fyzikov, Smolenice, 1984, pp. 95–104.
39. Hlavac, V., Sonka, M.: Digital Image Processing in Integrated Circuit Diagnostics and Design. In: Proceedings of 7th European Conference on Circuit Theory and Design, Prague, Czechoslovak Academy of Sciences 1985, pp. 42–45.
40. Vavrova, M., Kittnar, O., Hlavac, V., Sonka, M.: The Automated Processing of the Cineventriculograms. In: Medical Decision Making : Diagnostic Strategies and Expert Systems, van Bemmell, J.H., Gremy, F., Zvarova, J. eds., Amsterdam North Holland 1985, pp. 258–261.
41. Hlavac, V., Sonka, M.: IMG - Digital Image Analysis System. In: Proceedings of 4th IMEKO Conference Advances in Biomedical Measurements. Bratislava, Slovak Medical Society 1987, pp. 89–93.
42. Karas, V., Hlavac, V., Sonka, M.: The Analysis of the Phetoplantogram; New Methodological Aspects and Research Consequences. In Methods of Functional Anthropology (2), V. Novotny and S. Titlbachova editors, Universitas Carolina Pragensis, 1990, pp. 315–320.
43. Hlavac, V., Sonka, M., Simberova, S.: The Application of Digital Image Analysis System IMG in Medical Ultrasonographic Image Processing. In: Proceedings of the International Conference Biosignal '88, Brno, Technical Publishing House 1988, pp. 42–44.
44. Hlavac, V., Sonka, M., Woska, J.: Raster Image Analysis and Computer Graphics. In: Proc. of the Colloquium on Applied Stereology and Image Analysis '88, Stary Smokovec, Technical Publishing House Kosice, 1988, pp. 46–51.
45. Sonka, M.: Robot Vision - Control Strategies and Applications. In: Proceedings of Int. TECHRO '88 Conference, Duni - Sofia, Bulgarian Academy of Science, 1988, pp. 198–206.
46. Sonka, M.: Cognitive Robot Education and Image Processing Research at the Czech Technical University of Prague. In: Artificial Intelligence in Higher Education, Lecture Notes in Computer Science - 451, Berlin-New York, Springer Verlag 1989, pp. 168–172.
47. Parkkinen, J., Sonka, M., Cohen, G., Ehrhardt, J.C., Andreasen, N.: Shape Analysis of Cortical Structures in MR Images. Proceedings of Biosignal '90, Technical Publishing House Brno, June 1990, pp. 25–28.
48. Parkkinen, J., Cohen, G., Sonka, M., Ehrhardt, J.C., Andreasen, N.: Some Problems of Brain Image Analysis. Proceedings of Biosignal '90, Technical Publishing House Brno, June 1990, pp. 19–22.
49. Sonka, M., Hlavac, V., Marik, R., Matas, J., Novak, pp., Preucil, L., Woska, J.: Digital Image Applications in Industry, Proceedings of System Approach to Automation, Milano, Italy, November 1990, BIAS, pp. 85–98.
50. Kumar, N.V., Sonka, M., Casavant, T.: Image Understanding, a Parallel Approach. In: Proc. of the First Iowa Space Conference, Jan. 24–25, 1992, Iowa City, IA, pp. 252–260.
51. Sonka, M., Winniford, M.D., Collins, S.M.: Reduction of Failure Rates in Automated Analysis of Difficult Images: Improved simultaneous detection of left and right coronary borders. Computers in Cardiology '92, Durham, NC, IEEE, Los Alamitos, pp. 111–114, 1992.
52. Sonka, M., Collins, S.M.: Robust Detection of Lumen Centerlines in Complex Coronary Angiograms. Biomedical Image Processing and Biomedical Visualization, SPIE Vol. 1905, Bellingham, WA, pp. 82–92, 1993.

53. Sonka, M., Tadikonda, S.K., Collins, S.M.: Genetic Algorithms in Hypothesize-and-Verify Image Interpretation. *Sensor Fusion VI*, Boston, MA, Proceedings SPIE, Vol. 2059, pp. 236–247, 1993.
54. Sonka, M., Reddy, G., Winniford, M.D., Collins, S.M.: Adaptive Simultaneous Coronary Border Detection: A Method for Accurate Analysis of Small Diameter Vessels. *Computers in Cardiology*, London, 1993, pp. 109–112.
55. Sonka, M., Zhang, X., Siebes, M., Chada, R.R., McKay, C.M., Collins, S.M.: Automated Detection of Wall and Plaque Borders in Intravascular Ultrasound Images. *Physiology and Function from Multidimensional Images*, SPIE Vol. 2168, pp. 13–22.
56. Sonka, M., Sundaramoorthy, G., Hoffman, E.A.: Knowledge-Based Segmentation of Intrathoracic Airways from Multidimensional High Resolution CT Images. *Physiology and Function from Multidimensional Images*, SPIE Vol. 2168, pp. 73–85.
57. Sundaramoorthy, G., Hoffman, E.A., Qian, J., Mitsa, T., Sonka, M.: Knowledge-Based Intrathoracic Airway Segmentation: Computer Model and Physical Phantom Based Validation. *Physiology and Function from Multidimensional Images*, SPIE Vol. 2168, pp. 86–97.
58. Siebes, M., Chada, R.R., Zhang, X., Sonka, M., McKay, C.M., Collins, S.M.: Biomechanical characterization of blood vessel and plaque from intravascular ultrasound images. *Physiology and Function from Multidimensional Images*, SPIE Vol. 2168, pp. 33–42.
59. Sonka, M., Park, W., Hoffman, E.A.: Validation of an Enhanced Knowledge-Based Method for Segmentation and Quantitative Analysis of Intrathoracic Airway Trees from Three-Dimensional CT Images. *Proceedings SPIE Vol. 2433 - Physiology and Function from Multidimensional Images*, pp. 158–166, 1995.
60. Kim, J.W., Sonka, M.: Neural Network-Based Method for Intrathoracic Airway Detection from Three-Dimensional CT Images, *Proceedings SPIE Vol. 2433 - Physiology and Function from Multidimensional Images*, 1995.
61. Sonka, M., Zhang, X., Siebes, M., DeJong, S., McKay, C.R., Collins, S.M.: Automated Segmentation of Coronary Wall and Plaque from Intravascular Ultrasound Image Sequences. *Computers in Cardiology*, 1994, pp. 281–284.
62. Zhang, X., Collins, S.M., Sonka, M.: Tree Pruning Strategy in Automated Detection of Coronary Trees in Cineangiograms. *Proceedings of International Conference on Image Processing ICIP'95*, IEEE, 1995, 656–659
63. R Uppaluri, T Mitsa, E A Hoffman, G McLennan, M Sonka: Texture analysis of pulmonary parenchyma in normal and emphysematous lung, *Physiology and Function from Multidimensional Images*, Proceedings SPIE Vol. 2709, Bellingham, WA, SPIE, 1996, pp. 456–467.
64. G Prause, X Zhang, S DeJong, C R McKay, M Sonka: Semi-automated segmentation and 3D reconstruction of coronary trees: Biplane angiography and intravascular ultrasound data fusion, *Physiology and Function from Multidimensional Images*, Proceedings SPIE Vol. 2709, Bellingham, WA, SPIE, 1996, pp.82–92.
65. Sonka, M., Liang, W., Zhang, X., DeJong, S., Collins, S.M., McKay, C.R.: Three-Dimensional Automated Segmentation of Coronary Wall and Plaque from Intravascular Ultrasound Pullback Sequences. *Computers in Cardiology*, IEEE, Los Alamitos, 1995, pp. 637–640.
66. W Park, E A Hoffman, M Sonka: Fuzzy logic approach to extraction of intrathoracic airway trees from three-dimensional CT images, *Image Processing*, Proceedings SPIE Vol. 2710, Bellingham, WA, SPIE, 1996, pp. 210–219.

67. Zhang, X., DeJong, S., McKay, C.R., Collins, S.M., Sonka, M.: Automated Characterization of Plaque Composition from Intravascular Ultrasound Images. *Computers in Cardiology, IEEE*, Los Alamitos, 1996, pp. 649–652.
68. Liang, W., DeJong, S., McKay, C.R., Sonka, M.: Automated Detection of LV Myocardial Borders from Intracardiac Ultrasound Images. *Computers in Cardiology, IEEE*, Los Alamitos, 1996, pp. 265–268.
69. Prause, G., DeJong, S., McKay, C.R., Sonka, M.: Geometrically Correct 3-D Reconstruction of Coronary Wall and Plaque: Combining Biplane Angiography and Intravascular Ultrasound. *Computers in Cardiology, IEEE*, Los Alamitos, 1996, pp. 325–328.
70. W Liang, P Kanani, J Allan, R Kerber, C R McKay, M Sonka: Left ventricle myocardial border detection in three-dimensional intracardiac ultrasound images, *Physiology and Function from Multi- dimensional Images, Proceedings SPIE Vol. 3033*, Bellingham, WA, SPIE, 1997, pp. 316-323
71. J. M. Reinhardt, W. Park, E. A. Hoffman, M. Sonka, Intrathoracic airway wall detection using graph search and scanner PSF information, *Medical Imaging – Physiology and Function from Multidimensional Images, Proceedings SPIE Vol. 3033*, Bellingham, WA, SPIE, 1997, pp.93–101.
72. G. P. Prause, S. C. DeJong, C. R. McKay, M. Sonka, Accurate 3D reconstruction of tortuous coronary vessels using biplane angiography and intravascular ultrasound, *Medical Imaging – Physiology and Function from Multidimensional Images, Proceedings SPIE Vol. 3033*, Bellingham, WA, SPIE, 1997, pp.225–234.
73. W. Liang, X. Zhang, M. Sonka: An object-oriented framework for rapid development of image analysis applications, *Medical Imaging – Physiology and Function from Multidimensional Images, Proceedings SPIE Vol. 3034*, Bellingham, WA, SPIE, 1997, pp. 682–688.
74. X. Zhang, S. DeJong, C. R. McKay, M. Sonka: Image Segmentation and Tissue Characterization in Three-dimensional Intravascular Ultrasound Images, *Medical Imaging – Image Processing, Proceedings SPIE Vol. 3034*, Bellingham, WA, SPIE, 1997, pp. 131–137.
75. G. Sarty, M. Sonka, W. Liang, R. A. Pierson: *Medical Imaging – Physiology and Function from Multidimensional Images, Proceedings SPIE Vol. 3034*, Bellingham, WA, SPIE, 1997, pp. 822–829.
76. C. Zeng, M. Sonka: Local Three-Dimensional Shape-Preserving Smoothing without Shrinkage, *Proc. Int. Conf. Image Proc. ICIP'97, IEEE*, pp. 393–396, Vol. 1, 1997.
77. W. Liang, R L Browning, R M Lauer, M. Sonka: Automated Analysis of Brachial Ultrasound Images and Image Sequences, *Proc. IEEE Engineering in Medicine and Biology Society*, vol. 19, IEEE, pp. 546–548, 1997.
78. M. Brejl, M. Sonka: Automated Design of Optimal Border Detection Criteria: Learning from Image Segmentation Examples, *Proc. IEEE Engineering in Medicine and Biology Society*, vol. 19, IEEE, pp. 542–545, 1997.
79. Molina, C., Prause, G.P.M., Radeva, P., Sonka, M.: 3-D Catheter Path Reconstruction from Biplane Angiograms. *Proceedings SPIE, Vol. 3338*, 1998, pp. 504–512.
80. Sonka, M.: Teaching Digital Image Processing and Computer Vision in a Quantitative Imaging Electronic Classroom. *Proceedings SPIE, Vol. 3338*, 1998, pp. 1–13.
81. Liang, W., Browning, R., Lauer, R.M., Sonka, M.: Automated Analysis of Brachial Ultrasound Time Series. *Proceedings SPIE, Vol. 3337*, 1998, pp. 108–118.

82. Krivanek, A., Liang, W., Sarty, G., Pierson, R., Sonka, M.: Automated Follicle Analysis in Ovarian Ultrasound. *Proceedings SPIE*, Vol. 3338, 1998, pp. 588–596.
83. Uppaluri, R., McLennan, G., Sonka, M., Hoffman, E.: Computer-based Objective Quantitative Assessment of Pulmonary Parenchyma via X-ray CT. *Proceedings SPIE*, Vol. 3337, 1998, pp. 377–383.
84. Wahle, A., Prause, G.P.M., DeJong, S.C., Sonka, M.: Accurate 3-D Fusion of Angiographic and Intravascular Ultrasound Data. *Computer Assisted Radiology and Surgery (CAR '98)*, H. U. Lemke and M. W. Vannier and K. Inamura and A. G. Farman editors, *Excerpta Medica International Congress Series*, Elsevier, Amsterdam, Vol. 1165, pp. 164–169, 1998.
85. A. Wahle, G. P. M. Prause, S. C. DeJong, M. Sonka, Limitations of the Manual Pullback in Intracoronary Ultrasound Imaging, *Proc. 20th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS)*, Hong Kong, IEEE Press, Piscataway NJ, pp. 506–509, 1998.
86. A. Wahle, G. P. M. Prause. S. C. DeJong, M. Sonka, Determination of the Absolute Axial Orientation of Intracoronary Ultrasound Images in Fusion with Biplane Angiography, *Proc. Computers in Cardiology 1998*, Cleveland OH, IEEE Press, Piscataway NJ, pp. 153-156, 1998.
87. A. Wahle, G. P. M. Prause, C. von Birgelen, R. Erbel, M. Sonka: Automated Calculation of the Axial Orientation of Intravascular Ultrasound Images by Fusion with Biplane Angiography. *Proc. Medical Imaging 1999: Image Processing*, San Diego CA, *Proceedings SPIE* Vol. 3661, Bellingham WA, pp. 1094–1104, 1999.
88. S. Mitchell, A. Wahle, C. von Birgelen, R. Erbel, M. Sonka: Real-Time Visualization of Coronary Interventions using VRML. *Proc. Medical Imaging 1999: Physiologic Imaging*, San Diego CA, *Proceedings SPIE* Vol. 3660, Bellingham WA, paper, 279-287, 1999.
89. A. Wahle, G. P. M. Prause. S. C. DeJong, M. Sonka, A Comprehensive Method for Geometrically Correct 3-D Reconstruction of Coronary Arteries by Fusion of Intravascular Ultrasound and Biplane Angiography. In: *Computer-Aided Diagnosis in Medical Imaging*, K. Doi, H. MacMahon, M. L. Giger, K. R. Hoffmann editors, Elsevier, Amsterdam, 363–368, 1999.
90. A. Wahle A, S.C. Mitchell, C. von Birgelen, R. Erbel, M. Sonka, On-Site 3-D Reconstruction and Visualization of Intravascular Ultrasound based upon Fusion with Biplane Angiography. *CARS '99, Computer Assisted Radiology and Surgery*, Lemke HU, Vannier MW, Inamura K, Farman AG (eds.), Paris FR, *Excerpta Medica International Congress Series*, Elsevier, 56–60, 1999.
91. Mitchell SC, Wahle A, von Birgelen C, Erbel R, Sonka M: Real-Time Visualization of Coronary Interventions using VRML. *Medical Imaging 1999: Physiology and Function from Multidimensional Images*, San Diego CA, SPIE, 279–287, 1999.
92. Olszewski ME, Long RM, Mitchell SC, Wahle A, Sonka M: Quantitative Measurements in Geometrically Correct Representation of Coronary Vessels in 3-D and 4-D. *4th IEEE Southwest Symposium on Image Analysis and Interpretation*, Austin TX, IEEE-CS Press, 259–263, 2000.
93. Brejl, M., Sonka, M.: Automated Initialization and Automated Design of Border Detection Criteria in Edge-Based Image Segmentation. *4th IEEE Southwest Symposium on Image Analysis and Interpretation*, Austin TX, IEEE-CS Press, 26–30, 2000.
94. Olszewski ME, Long RM, Mitchell SC, Wahle A, Sonka M: A Quantitative Study of Coronary Vasculature in Four Dimensions. *World Congress 2000 - 22nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS)*, Chicago IL, IEEE Press, 2621–2624, 2000.

95. Sonka M, Wahle A, Liang W: Cardiovascular Disease: Quantification, Prevention, and Treatment via Image Analysis. Keynote lecture. EuroConference BIOSIGNAL 2000, 2000.
96. Wahle A, Mitchell SC, Long RM, Sonka M: Accurate Volumetric Quantification of Coronary Lesions by Fusion between Intravascular Ultrasound and Biplane Angiography. CARS 2000, Computer Assisted Radiology and Surgery, Lemke HU, Vannier MW, Inamura K, Farman AG, Doi K (eds), Proceedings of the 14th International Congress and Exhibition, San Francisco CA, Excerpta Medica International Congress Series, Elsevier Volume 1214, Page 549-554, 2000.
97. Wahle A, Mitchell SC, Olszewski ME, Long RM, Sonka M: Accurate Visualization and Quantification of Coronary Vasculature by 3-D/4-D Fusion from Biplane Angiography and Intravascular Ultrasound. EBiOS 2000, Biomonitoring and Endoscopy Technologies, Amsterdam NL, SPIE Europto, pp. 144–155, Number 4158-31, 2001.
98. S. C. Mitchell, B. Lelieveldt, R. van der Geest, J.Schaap, J. H.C. Reiber, M. Sonka: Segmentation of Cardiac MR Images: An Active Appearance Model Approach, SPIE Medical Imaging - Image Processing, Vol. 3979, pp. 224–234, SPIE, 2000.
99. J. Tschirren, R. Lauer, M. Sonka: Doppler blood velocity assessment based on image analysis of video tape recorded image data. SPIE Medical Imaging - Image Processing, Vol. 3979, pp. 1516–1527, SPIE, 2000.
100. T. Lu, M. Sonka and D. Yun: Endoscopic Exploration and Measurement from 3D Angiography and Intravascular Ultrasound Images, The 9th Annual Medicine Meets Virtual Reality Conference (MMVR2001), 2001, Newport Beach, CA
101. M. Sonka, B. Lelieveldt, S. C. Mitchell, J. G. Bosch, R. J. van der Geest, J. H.C. Reiber: Active appearance model segmentation, Digital and Computational Video, IEEE Computer Society, Los Alamitos CA, p. 64–68, 2001.
102. S.C. Mitchell, B.P.F. Lelieveldt, R.J. van der Geest, H.G. Bosch, J.H.C. Reiber, M. Sonka: Time-continuous segmentation of cardiac MR image sequences using active appearance motion models. SPIE Medical Imaging - Image Processing, Vol. 4322, pp. 249–256, SPIE, 2001.
103. H.G. Bosch, S.C. Mitchell, B.P.F. Lelieveldt, F. Nijland, O. Kamp, M. Sonka, J.H.C. Reiber: Active appearance motion models for endocardial contour detection in time sequences of echocardiograms. SPIE Medical Imaging - Image Processing, Vol. 4322, pp. 257–268, SPIE, 2001.
104. A. Wahle, S.C. Mitchell, S.D. Ramaswamy, K.B. Chandran, M. Sonka: Four-dimensional coronary morphology and computational hemodynamics. SPIE Medical Imaging - Image Processing, Vol. 4322, pp. 743–754, SPIE, 2001.
105. A. Wahle, S.C. Mitchell, S.D. Ramaswamy, K.B. Chandran, M. Sonka: Virtual angioscopy in human coronary arteries with visualization of computational hemodynamics. SPIE Medical Imaging - Physiology and Function from Multidimensional Images, Vol. 4321, pp. 32–43, SPIE, 2001.
106. J. Tschirren, R.M. Lauer, M. Sonka: Doppler blood velocity assessment based on image analysis of video tape recorded image data. SPIE Medical Imaging - Physiology and Function from Multidimensional Images, Vol. 4321, pp. 305–311, SPIE, 2001.
107. M. Sonka: Cardiovascular imaging: past, present and future (Cardiovascular Symposium keynote address), Computer Assisted Radiology and Surgery 2001, pp. 857–862, Elsevier Science B.V., 2001.

108. Wahle, S.C. Mitchell, S.D. Ramaswamy, K.B. Chandran, M. Sonka: Visualization of human coronary arteries with quantification results from 3-D and 4-D computational hemodynamics based upon virtual endoscopy, *Computer Assisted Radiology and Surgery* 2001, pp. 877–882, Elsevier Science B.V., 2001.
109. H.G. Bosch, S.C. Mitchell, B.P.F. Lelieveldt, F. Nijland, O. Kamp, M. Sonka, J.H.C. Reiber: Active appearance motion models for fully automated endocardial contour detection in time sequences of echocardiograms: *Computer Assisted Radiology and Surgery* 2001, pp. 896–901, Elsevier Science B.V., 2001.
110. B.P.F. Lelieveldt, S.C. Mitchell, R.J. van der Geest, H.G. Bosch, M. Sonka, J.H.C. Reiber: Time-continuous segmentation of cardiac MR images using active appearance motion models, *Computer Assisted Radiology and Surgery* 2001, pp. 917–921, Elsevier Science B.V., 2001.
111. R Beichel, S Mitchell, E Sorantin, F Leberl, A Goshtasby, M Sonka: Shape- and appearance-based segmentation of volumetric medical images, *Proceedings of ICIP 2001*, Los Alamitos CA, IEEE, 2001, p. 589–592.
112. J.G. Bosch, S.C. Mitchell, B.P.F. Lelieveldt, F. Nijland, O. Kamp, M. Sonka, J.H.C. Reiber, "Fully Automated Endocardial Contour Detection in Time Sequences of Echocardiograms by Active Appearance-Motion Models", *Proc. Computers in Cardiology* 2001, pp. 93–96, IEEE Press, 2001.
113. R. Beichel, G. Gotschuli, E. Sorantin, F. Leberl, M. Sonka: Diaphragm Dome Surface Segmentation in CT Data Sets: A 3D Active Appearance Model Approach, *SPIE Medical Imaging - Image Processing*, Vol. 4684, pp. 475–484, SPIE, 2002.
114. S. C. Mitchell, B. P.F. Lelieveldt, J. G. Bosch, R. van der Geest, J. H.C. Reiber, M. Sonka: Segmentation of cardiac MR volume data using 3D active appearance models, *SPIE Medical Imaging - Image Processing*, Vol. 4684, pp. 433–443, SPIE, 2002.
115. J. G. Bosch, S. C. Mitchell, B. P.F. Lelieveldt, F. Nijland, O. Kamp, M. Sonka, J. H.C. Reiber: Fully Automated Endocardial Contour Detection in Time Sequences of Echocardiograms by Three-dimensional Active Appearance Models, *SPIE Medical Imaging - Image Processing*, Vol. 4684, pp. 452–462, SPIE, 2002.
116. M. Sonka, A. Wahle, Y. G. Lai, K. B. Chandran, and J. D. Rossen. Virtual angioscopy: 3-D and 4-D coronary hemodynamics and local atherosclerosis. In *Proc. 3rd International Workshop on Multislice CT, 3-D Imaging, Virtual Endoscopy*, Rome IT, Milan, June 2002. Springer Italia, 2002.
117. A. Wahle, S. D. Ramaswamy, M. E. Olszewski, J. D. Rossen, J. J. Lopez, Y. G. Lai, K. B. Chandran, and M. Sonka. Temporal analysis of 3-D coronary plaque morphology and hemodynamic shear stress distribution in-vivo. In H. U. Lemke, M. W. Vannier, K. Inamura, A. G. Farman, K. Doi, and J. H. C. Reiber, editors, *Computer Assisted Radiology and Surgery (CARS 2002)*, <http://www.cars-publications.org>, 2002. Springer/CARS.
118. Wahle A, Ramaswamy SD, Olszewski ME, Rossen JD, Lopez JJ, Lai YG, Chandran KB, Sonka M: Temporal Analysis of 3-D Coronary Plaque Morphology and Hemodynamic Shear Stress Distribution In-Vivo. *Advances in Medical Imaging (I)*, Niederlag W, Lemke HU (eds), Health Academy 2002;(2):25-31, 2002.
119. Wahle A, Sonka M: Three- and Four-Dimensional Modeling of Coronary Atherosclerosis and Hemodynamics. <http://www.athero.org>, International Atherosclerosis Society, Commentary #70, 2002.
120. B.P.F. Lelieveldt, S.C. Mitchell, J.G. Bosch, R.J. van der Geest, M. Sonka, J.H.C. Reiber, "3D Active Appearance Models: Application to Cardiac MR and Ultrasound image segmentation", *Proc. CARS 2002*, pp 897-901, Springer, 2002.

121. R. Medina, A. Wahle, M. E. Olszewski, and M. Sonka. Volumetric quantification of coronary arteries reconstructed by fusion between intravascular ultrasound and biplane angiography. In Proc. 2002 IEEE International Symposium on Biomedical Imaging, pages 891-894, Piscataway NJ, 2002. IEEE Press.
122. C A J Schulze-Bauer, M Auer, R Stollberger, P Regitnig, M Sonka, G Holzapfel, Assessment of plaque stability by means of high-resolution MRI and finite element analyses of local stress and strain, In Proc. 2002 IEEE International Symposium on Biomedical Imaging, pages 449–452, Piscataway NJ, 2002. IEEE Press.
123. J Guo, J M Reinhardt, H Kitaoka, L Zhang, M Sonka, G McLennan, E A Hoffman: Integrated system for CT-based assessment of parenchymal lung disease, In Proc. 2002 IEEE International Symposium on Biomedical Imaging, pages 871–874, Piscataway NJ, IEEE Press, 2002.
124. M. Sonka, R. Beichel, A. Bornik, G. Gotschuli, G. Wergartner, E. Sorantin, and F. Leberl. Virtual liver surgery planning system - image processing and augmented reality. In Biomedical Optics '02, 2002.
125. M. Sonka, A. Wahle, Y. G. Lai, K. B. Chandran, J. D. Rossen: Virtual Angioscopy: 3-D and 4-D Coronary Hemodynamics and Local Atherosclerosis, Proc. 3rd International Workshop on Multislice CT, 3-D Imaging, Virtual Endoscopy, Rome IT, Springer Italia, Milan, 2003.
126. B.P.F. Lelieveldt, M. Uzumcu, R.J. van der Geest, J.H.C. Reiber, M. Sonka, "Multi-view Active Appearance Models for consistent segmentation of multiple standard views: application to long- and short axis cardiac MR pairs", Computer Assisted Radiology and Surgery (CARS 2003), p. 1141– 1146, Elsevier, 2003. M. E. Olszewski, A. Wahle, R. Medina, S. C. Mitchell, M. Sonka: Integrated System for Quantitative Analysis of Coronary Plaque via Data Fusion of Biplane Angiography and Intravascular Ultrasound, Computer Assisted Radiology and Surgery (CARS 2003), Elsevier, p. 1117- 1122, 2003.
127. C.R.Oost, B.P.F.Lelieveldt, G.Koning, M.Sonka, J.H.C.Reiber, "Left ventricle contour detection in X-ray angiograms using Multi-View Active Appearance Models", SPIE Medical Imaging 2003, Image processing, Vol. 5032, p. 394–404, 2003.
128. J.G. Bosch, F. Nijland, S.C. Mitchell, B.P.F. Lelieveldt, O.Kamp, M.Sonka, J.H.C. Reiber, "Auto- mated classification of wall motion abnormalities by Principal Component Analysis of endocardial shape motion patterns in echocardiograms", SPIE Medical Imaging 2003, Image processing, Vol. 5032, p. 38– 49, 2003.
129. Mitchell SC, Lelieveld BPF, Bosch JG, Reiber JHC, Sonka M. Disease characterization via coefficients of fitted Active Appearance Models. SPIE Medical Imaging 2003, Image processing, Vol. 5032, p. 949– 957, 2003.
130. Wahle A, Lopez JJ, Pennington EC, Meeks SL, Braddy KC, Fox JM, Brennan TMH, Buatti JM, Rossen JD, Sonka M: Estimating the Actual Dose Delivered by Intravascular Coronary Brachytherapy using Geometrically Correct 3-D Modeling. Medical Imaging 2003: Visualization, Image-Guided Procedures, and Display, SPIE Proceedings Vol. 5029, p. 129–137, 2003.
131. Wahle A, Medina R, Braddy KC, Fox JM, Brennan TMH, Lopez JJ, Rossen JD, Sonka M: Impact of Local Vessel Curvature on the Circumferential Plaque Distribution in Coronary Arteries. Medical Imaging 2003: Physiology and Function: Methods, Systems, and Applications, SPIE Proceedings Vol. 5031, p. 204–213, 2003.

132. F Yang, G Holzapfel, C Schulze-Bauer, R Stollberger, D Thedens, L Bolinger, A Stolpen, M Sonka: Vascular MR segmentation: Wall and plaque, SPIE Medical Imaging 2003, Image processing, Vol. 5032, p. 1667–1675, 2003.
133. J Tschirren, E.A. Hoffman, G. McLennan, M. Sonka: Branchpoint Labeling and Matching in Human Airway Trees, Medical Imaging 2003: Physiology and Function: Methods, Systems, and Applications, SPIE Proceedings Vol. 5031, p. 187–194, 2003.
134. K Palagyi, J Tschirren, M Sonka: Quantitative analysis of three-dimensional tubular tree structures, SPIE Medical Imaging 2003, Image processing, Vol. 5032, p. 277–287, 2003.
135. A Bornik, R Beichel, B Reitinger, G Gotschuli, E Sorantin, F Leberl, M Sonka: Computer Aided Liver Surgery Planning: An Augmented Reality Approach, Medical Imaging 2003, Visualization, Image-Guided Procedures, and Display, Vol. 5029, p. 395–406, 2003.
136. A. Bornik, R. Beichel, B. Reitinger, G. Gotschuli, E. Sorantin, F. Leberl, and M. Sonka. Computer aided liver surgery planning based on augmented reality techniques. In T. Wittenberg et al., editor, Bildverarbeitung für die Medizin 2003, pages 249-253. Springer, 2003.
137. M. Sonka, J.G. Bosch, B.P.F. Lelieveldt, S.C. Mitchell, J.H.C. Reiber, Computer-aided diagnosis via model-based shape analysis: Cardiac MR and echo, Proc. CARS 2003, Elsevier, p. 1013-1018, 2003.
138. F. Yang, G. Gallardo, M. A. Mackey, F. Ianzini, M. Sonka. Segmentation and Quantitative Analysis of the Living Tumor Cells Using Large Scale Digital Cell Analysis System, Medical Imaging 2004 - Image Processing, Vol. 5370, p.526–537, 2004.
139. G. Gallardo, F. Ianzini, M. A. Mackey, M. Sonka, F. Yang. Mitotic Cell Recognition with Hidden Markov Models, Medical Imaging 2004: Visualization, Image-Guided Procedures, and Display, SPIE Proceedings Vol. 5367, p. 661–668, 2004.
140. R. Medina, A. Wahle, M. E. Olszewski, M. Sonka: Curvature and Torsion Estimation for Coronary Artery Motion Analysis, Medical Imaging 2004: Physiology and Function: Methods, Systems, and Applications, SPIE Proceedings Vol. 5369, p. 504–515, 2004.
141. K. Li, X. Wu, D.Z. Chen, M. Sonka: Efficient Optimal Surface Detection: Theory, Implementation and Experimental Validation, Medical Imaging 2004 - Image Processing, Vol. 5370, 2004, p 620-627.
142. M. E. Olszewski, A. Wahle, S. C. Mitchell, M. Sonka: Segmentation of intravascular ultrasound images: A machine learning approach mimicking human vision, Computer Assisted Radiology and Surgery (CARS 2004), Elsevier, p. 1045–1049, 2004.
143. H. Zhang, L. Bu, A. Stolpen, M. Sonka, S. Ge: Real-time three-dimensional digital Doppler method based on Gaussian control surface for measurement of flow volumes. Computer Assisted Radiology and Surgery (CARS 2004), Elsevier, p. 1084–1089, 2004.
144. R. Beichel, T. Pock, Ch. Janko, R. Zotter, B. Reitinger, A. Bornik, K. Palagyi, E. Sorantin, G. Werkgartner, H. Bischof, and M. Sonka. Liver segment approximation in CT data for surgical resection planning. Medical Imaging 2004 - Image Processing, Vol. 5370, p. 475–484, 2004.
145. X. Zhang, G. McLennan, E. A. Hoffman, and M. Sonka. Computerized detection of pulmonary nodules using cellular neural networks in CT images. Medical Imaging 2004 - Image Processing, Vol. 5370, 2004, p 30-41.
146. X. Zhang, M. Sonka. Curvature estimation of arbitrary discrete 3D surfaces using partial derivatives based on distance maps. Medical Imaging 2004 - Image Processing, Vol. 5370, 2004, p 1332-1340.

147. M. Suter, J. Reinhardt, M. Sonka, W. Higgins, E. A. Hoffman, G. McLennan, Three-dimensional true color topographical analysis of the pulmonary airways. *Medical Imaging 2004: Physiology and Function: Methods, Systems, and Applications*, SPIE Proceedings Vol. 5369, p. 189–198, 2004.
148. J. Tschirren, E. Hoffman, G. McLennan, M. Sonka. Airway tree segmentation using adaptive regions of interest *SPIE Medical Imaging 2004 - Physiology and Function*, Vol. 5369, 2004, p 117-124.
149. H. Shikata, E. Hoffman, M. Sonka. Automated segmentation of pulmonary vascular tree from 3D CT images *SPIE Medical Imaging 2004 - Physiology and Function*, Vol. 5369, 2004, p 107-116.
150. Wahle A, Olszewski ME, Vigmostad SC, Medina R, Coskun AU, Feldman CL, Stone PH, Braddy KC, Brennan TMH, Rossen JD, Chandran KB, Sonka M: Quantitative Analysis of Circumferential Plaque Distribution in Human Coronary Arteries in Relation to Local Vessel Curvature. 2004 IEEE International Symposium on Biomedical Imaging, IEEE Press, p. 531–534, 2004.
151. R. Beichel, H. Bischof, G. Langs, M. Sonka: A Robust Matching Algorithm for Active Appearance Models. In: *Bildverarbeitung für die Medizin 2005*, H-P Meinzer, H Handels, A Horsch and T Tolxdorff eds., Springer, pages 355-359, 2005.
152. Wahle A, Lopez J J, Olszewski M E, Vigmostad S C, Braddy KC, Brennan T M H, Bokhari S W, Bennett J G, Holper E M, Rossen J D, Chandran K B, Sonka M: Relationship between Plaque Development and Local Hemodynamics in Coronary Arteries. Amini AA, Manduca A (eds): *Medical Imaging 2005: Physiology, Function, and Structure from Medical Images*. SPIE Proceedings Volume 5746, Pages 223-232, 2005.
153. Olszewski M E, Wahle A, Khullar D, Subramanyan K, Sonka M: A Study Investigating Automated Quantitative Analyses of Coronary Multidetector Computed Tomography Images. In: Amini AA, Manduca A (eds): *Medical Imaging 2005: Physiology, Function, and Structure from Medical Images*. SPIE Proceedings Volume 5746, Page 214-222, 2005.
154. Olszewski M E, Wahle A, Vigmostad S C, Sonka M: Multidimensional Segmentation of Coronary Intravascular Ultrasound Images using Knowledge-Based Methods. In: Fitzpatrick J M, Reinhardt J M (eds): *Medical Imaging 2005: Image Processing* SPIE Proceedings Volume 5747, Page 496-504, 2005.
155. Walker N E, Olszewski M E, Wahle A, Nixon E, Sieren J P, Yang F, Hoffman E A, Rossen J D, Sonka M: Measurement of Coronary Vasoreactivity in Sheep using 64-Slice Multidetector Computed Tomography and 3-D Segmentation. *CAR 2005*, in: Lemke HU, Inamura K, Doi K, Vannier M W, Farman A G (eds): *Computer Assisted Radiology and Surgery (CARS 2005)*. Proceedings of the 19th International Congress and Exhibition, Berlin, Excerpta Medica International Congress Series, Elsevier Volume 1281, Page 1304, 2005.
156. X Zhang, G McLennan, E. A. Hoffman, and M Sonka: 3D segmentation of non-isolated pulmonary nodules in high resolution CT images. *Proc. SPIE Int. Soc. Opt. Eng.* 5747, 1438 (2005).
157. X Zhang, G McLennan, E. A. Hoffman, and M Sonka: A complete CAD system for pulmonary nodule detection in high resolution CT images *Proc. SPIE Int. Soc. Opt. Eng.* 5747, 85 (2005)
158. E McMahan, J Korinek, H Zhang, M Sonka, A Manduca and M Belohlavek: Neural Network and Principal Component Analyses of Highly Variable Myocardial Mechanical Waveforms Derived from Echocardiographic Ultrasound Images, *Proceedings Int Joint Conf Neural Networks*.
159. M.B. Merickel, X. Wu, M. Sonka, and M. Abramoff, Optimal Segmentation of the Optic Nerve Head from Stereo Retinal Images, *Medical Imaging 2005: Image Processing*, SPIE Proceedings Volume 5747, Pages 1031-1038, 2006.

160. Zhao F, Zhang H, Walker N E, Yang F, Olszewski M E, Wahle A, Scholz T D, Sonka M: Quantitative Analysis of Two-Phase 3D+Time Aortic MR Images. In: Reinhardt J M, Pluim J P (eds): Medical Imaging 2006: Image Processing. SPIE Proceedings Volume 6144, Page 699-708, 2006.
161. Zhang H, Walker N E, Mitchell S C, Thomas M T, Wahle A, Scholz T D, Sonka M: Analysis of Four-Dimensional Cardiac Ventricular Magnetic Resonance Images using Statistical Models of Ventricular Shape and Cardiac Motion. In: Manduca A, Amini A A (eds): Medical Imaging 2006: Physiology, Function, and Structure from Medical Images. SPIE Proceedings Volume 6143, Page 47-57, 2006.
162. X. Zhang, J. Stockel, M. Wolf, P. Cathier, G. McLennan, E. A. Hoffman, and M. Sonka: Computer- ized detection of pulmonary nodules using a combination of 3D global and local shape information based on helical CT images. Medical Imaging 2006: Image Processing, edited by Joseph M. Reinhardt, Josien P. W. Pluim, Proc. of SPIE Vol. 6144, pages 61441V-1 - 61441V-10, 2006.
163. S. Ukil, M. Sonka, and J. M. Reinhardt: Automatic segmentation of pulmonary fissures in X-ray CT images using anatomic guidance. Medical Imaging 2006: Image Processing, edited by Joseph M. Reinhardt, Josien P. W. Pluim, Proc. of SPIE Vol. 6144, pages 61440N-1 - 61440N-11, 2006.
164. Sonka M, Zhao F, Zhang H, Wahle A, Scholz T D: Early Detection of Aortic Aneurysm Risk from 4-D MR Image Data. Computers in Cardiology 2006, IEEE Press, pages 69-72, 2006.
165. Olszewski M E, Wahle A, Vembar M, Ciancibello L, Kerner A, Beyar R, Ghersin E, Subramanyan K, Sonka M: Quantitative Analysis of Vascular Dimensions and Plaque Composition in Coronary Multidetector Computed Tomography Images. In: Manduca A, Amini AA (eds): Medical Imaging 2006: Physiology, Function, and Structure from Medical Images. SPIE Proceedings Volume 6143, Page 58-69, 2006.
166. M.B. Merickel, M.D. Abramoff, M. Sonka, and X. Wu, Segmentation of the Optic Nerve Head Combining Pixel Classification and Graph Search, Medical Imaging 2007: Image Processing, SPIE Proceedings Volume Volume 6512, pp. 651215, 2007.
167. H. Zhang, M. T. Thomas, N. E. Walker, A. H. Stolpen, A. Wahle, T. D. Scholz, and M. Sonka: Four-dimensional functional analysis of left and right ventricles using MR images and active appearance models. Proc. SPIE 6511, 65111M (2007)
168. M. Haeker, M. Sonka, R. Kardon, V. A. Shah, X. Wu, and M. D. Abramoff: Automated segmentation of intraretinal layers from macular optical coherence tomography images. Proc. of SPIE Medical Imaging 2007: Image Processing. Volume 6512, pp. 651214 (2007).
169. P. K. Saha, H. Zhang, M. Sonka, and G. E. Christensen, C. S. Rajapakse: Active index model: a unique approach for regional quantitative morphometry in longitudinal and cross-sectional studies. Proc. of SPIE Medical Imaging 2007: Image Processing. Volume 6512, pp. 651214 (2007).
170. Sonka, M., Tschirren, J., Ukil, S., Zhang, X., Xu, Y., Reinhardt, J., van Beek, E.J., McLennan, G., Hoffman, E.A.: Pulmonary CT image analysis and computer aided detection. In: Biomedical Imaging: From Nano to Macro, 2007. ISBI 2007. 4th IEEE International Symposium on; 500-503, IEEE, 2007.
171. M. Niemeijer, M. K. Garvin, B. van Ginneken, M. Sonka, and M. D. Abramoff, "Vessel segmentation in 3D spectral OCT scans of the retina," in Proceedings of SPIE Medical Imaging 2008: Image Processing, vol. 6914, Feb. 2008.
172. M. Niemeijer, M. Sonka, M. K. Garvin, B. van Ginneken, and M. D. Abramoff, "Automated segmentation of the retinal vasculature in 3D optical coherence tomography images," Invest. Ophthalmol. Vis. Sci., E-Abstract 1832, May 2008.

173. K. Lee, Y. Yin, A. Wahle, M. E. Olszewski, and M. Sonka. 3-D segmentation and quantitative analysis of inner and outer walls of thrombotic abdominal aortic aneurysms. In X. P. Hu and A. V. Clough, editors, *Medical Imaging 2008: Physiology, Function, and Structure from Medical Images*, volume 6916, pages 691626.1-691626.9, Bellingham WA, 2008. SPIE Proceedings.
174. H. Zhang, A. A. Abiose, E. J. Buettner, E. K. Birrer, M. Sonka, J. B. Martins, and A. Wahle. Efficient cross-modality cardiac four-dimensional active appearance model construction. In X. P. Hu and A. V. Clough, editors, *Medical Imaging 2009: Biomedical Applications in Molecular, Structural, and Functional Imaging*, volume 7262, pages 726214.1-726214.9, Bellingham WA, 2009. SPIE Proceedings.
175. X. Liu, D.Z. Chen, X. Wu, and M. Sonka, Optimal Graph Search Based Image Segmentation for Objects with Complex Topologies, *SPIE International Symposium on Medical Imaging: Imaging Processing*, 2009.
176. Q. Song, X. Wu, and M. Sonka, Globally Optimal 3D Graph Search Incorporating Both Edge and Regional Information: Application to Aortic MR Image Segmentation, accepted to the *SPIE International Symposium on Medical Imaging: Imaging Processing*, Lake Buena Vista, Florida, February 2009.
177. Z. Hu, M. Niemeijer, K. Lee, M. D. Abramoff, M. Sonka, and M. K. Garvin, "Automated segmentation of the optic disc margin in 3-D optical coherence tomography images using a graph-theoretic approach," in *Proceedings of SPIE Medical Imaging 2009: Biomedical Applications in Molecular, Structural, and Functional Imaging*, pp. 7262-29, Feb. 2009.
178. K. Lee, M. Niemeijer, M. K. Garvin, Y. H. Kwon, M. Sonka, and M. D. Abramoff, "3-D segmentation of the rim and cup in spectral-domain optical coherence tomography volumes of the optic nerve head," in *Proceedings of SPIE Medical Imaging 2009: Biomedical Applications in Molecular, Structural, and Functional Imaging*, pp. 7262-83, Feb. 2009.
179. M. Niemeijer, M. K. Garvin, K. Lee, B. van Ginneken, M. D. Abramoff, and M. Sonka, "Registration of 3D spectral OCT volumes using 3D SIFT featurepoint matching," in *Proceedings of SPIE Medical Imaging 2009: Image Processing*, pp. 7259-53, Feb. 2009.
180. Z. Xu, M. Sonka, P.K. Saha: Recent improvements in tensor scale computation and its applications to medical imaging. In *Proceedings of SPIE Medical Imaging 2009: Image Processing*, Volume 7259, pp. 725939-725939-12 (2009).
181. G. Liang; J. M. Elkins; A. Coimbra; L. T. Duong; D. S. Williams; M. Sonka; P. K. Saha: A new osteophyte segmentation method with applications to an anterior cruciate ligament transection rabbit femur model via micro-CT imaging, *Proc. SPIE 7623*, 76234F (2010)
182. Z Gao, C Holtze, M Sonka, E Hoffman, P K Saha, Multiscale topo-morphologic opening of arteries and veins: a validation study on phantoms and CT imaging of pulmonary vessel casting of pigs: *Proc. SPIE 7623*, 76233H (2010)
183. Z Gao, C Holtze, R Grout, M Sonka, E Hoffman and P K Saha: Multi-scale Topo-morphometric Opening of Arteries and Veins: An Evaluative Study via Pulmonary CT Imaging. *Advances in Visual Computing, Lecture Notes in Computer Science*, 2010, Volume 6455/2010, 129-138.
184. K Lee; M D Abramoff; M Niemeijer; M K Garvin; M Sonka: 3-D segmentation of retinal blood vessels in spectral-domain OCT volumes of the optic nerve head. *Proceedings SPIE Vol. 7626, Medical Imaging 2010: Biomedical Applications in Molecular, Structural, and Functional Imaging*, Robert C. Molthen; John B. Weaver, Editors, 76260V

185. Y. Yin, M. Sonka: Electric field theory based approach to search-direction line definition in image segmentation: application to optimal femur-tibia cartilage segmentation in knee-joint 3-D MR. Proc. SPIE 7623, 76230W (2010).
186. H. Zhang; Abiose, A.K.; Campbell, D.N.; Sonka, M.; Martins, J.B.; Wahle, A.: Shape and motion analysis of left ventricle dyssynchrony from real-time 3D echocardiography, IEEE International Symposium on Biomedical Imaging: From Nano to Macro, ISBI 2010 , pp.616-619, 2010.
187. H Zhang, A K Abiose, D N Campbell, M Sonka, J B Martins, A Wahle: Left-ventricle segmentation in real-time 3D echocardiography using a hybrid active shape model and optimal graph search approach. Proc. SPIE 7626, 76261C, 2010.
188. Y. Wang, R. Beichel: Graph-Based Segmentation of Lymph Nodes in CT Data. Advances in Visual Computing, Lecture Notes in Computer Science, 2010, Volume 6454/2010, 312-321, DOI: 10.1007/978-3-642-17274-8-31, 2010.
189. P. Hua, Q. Song, M. Sonka, E. Hoffman, J. Reinhardt, "Pathological lung CT image segmentation using a graph-search algorithm," Proceedings of the 2011 IEEE International Symposium on Biomedical Imaging: From Nano to Macro (ISBI), Paper ID: 1604, 2011.
190. X. Xu, M. Niemeijer, Q. Song, M. Garvin, J. Reinhardt, M. Abramoff, "Retinal vessel width measurements based on a graph-theoretic method," Proceedings of the 2011 IEEE International Symposium on Biomedical Imaging: From Nano to Macro (ISBI), Paper ID: 1398, 2011.
191. Sonka M, Downe RW, Garvin JW, Lopez J, Kovarnik T, Wahle A.: IVUS-based assessment of 3D morphology and virtual histology: Prediction of atherosclerotic plaque status and changes. Conf Proc IEEE Eng Med Biol Soc. 2011 Aug;2011:6647-50.
192. M Sonka: Signal processing in medical imaging and image-guided intervention. ICASSP 2011: 5756-5759.
193. Lee K, Abramoff MD, Sonka M, Garvin MK. Automated segmentation of intraretinal layers from spectral-domain macular OCT: Reproducibility of layer thickness measurements. In Proceedings of SPIE Medical Imaging 2011: Biomedical Applications in Molecular, Structural and Functional Imaging, volume 7965, pages 796523-8, 2011. <http://dx.doi.org/10.1117/12.878242>
194. Niemeijer M, Lee K, Garvin M, Abramoff MD, Sonka M. Registration of macular OCT volumes combining ICP with graph based approach. Proc SPIE, Vol. 8314, 2012; DOI: 10.1117/12.911104.
195. Antony BJ, Abramoff MD, Sonka M, Kwon Y, Garvin M. Incorporation of texture-based features in optimal graph-theoretic approach with application to the 3-D segmentation of intraretinal surfaces in SD-OCT volumes. In Proceedings of SPIE Medical Imaging 2012: Image Processing, volume 8314, page 831451. SPIE, 2012. <http://dx.doi.org/10.1117/12.911491>.
196. Lee K, Abramoff MD, Garvin MK, Sonka M. Parallel graph search: application to intraretinal layer segmentation of 3-D macular OCT scans. In Proceedings of SPIE Medical Imaging 2012: Image Processing, volume 8314, page 831452. SPIE, 2012. <http://dx.doi.org/10.1117/12.911606>
197. Xu, L, Stojkovic, B, Ding, H, Song, Q, Wu, X, Sonka, M, Xu, J: Efficient searching of globally optimal and smooth multisurfaces with shape priors Proc. SPIE 8314, Medical Imaging 2012: Image Processing, 83140N, doi:10.1117/12.912316.
198. Wahle A, Lee K, Harding AT, Garvin MK, Niemeijer M, Sonka M, Abramoff MD. Extending the XNAT archive tool for image and analysis management in ophthalmology research. Proc SPIE Med Imaging, 2013; (8674-22).

199. Shah, A; Wang, JK; Garvin, MK; Sonka, M; Wu, X; Automated surface segmentation of internal limiting membrane in spectral-domain optical coherence tomography volumes with a deep cup using a 3-D range expansion approach. Biomedical Imaging (ISBI), 2014 IEEE 11th International Symposium on, 1405-1408, 2014, IEEE
200. Shi, F; Chen, X; Zhao, H; Zhu, W; Xiang, D; Gao, E; Sonka, M; Chen, H; Automated 3-D Retinal Layer Segmentation of Macular Optical Coherence Tomography Images with Serous Pigment Epithelial Detachments. 2014, IEEE
201. Oguz I, Styner M, Sanchez M, Shi Y, Sonka M.: LOGISMOS-B for Primates: Primate Cortical Surface Reconstruction and Thickness Measurement. Proc SPIE Int Soc Opt Eng. 2015;9413. pii: 941313.
202. Lee, Kyungmoo; Zhang, Li; Abramoff, Michael D; Sonka, Milan; Fast and memory-efficient LOGISMOS graph search for intraretinal layer segmentation of 3D macular OCT scans Medical Imaging 2015: Image Processing 9413 94133X 2015
203. Zhang, Ling; Wahle, Andreas; Chen, Zhi; Zhang, Li; Downe, Richard; Kovarnik, Tomas; Sonka, Milan; Joint registration of location and orientation of intravascular ultrasound pullbacks using a 3D graph based method SPIE Medical Imaging 94131I-94131I-8 2015
204. Zhang, Ling; Liu, Shaoxiong; Wang, Tianfu; Chen, Siping; Sonka, Milan; Improved segmentation of abnormal cervical nuclei using a graph-search based approach SPIE Medical Imaging 94200W-94200W-7 2015
205. Zhang, Ling; Wahle, Andreas; Chen, Zhi; Downe, Richard; Lopez, John; Kovarnik, Tomas; Sonka, Milan; An integrated framework for spatio-temporal registration of intravascular ultrasound pullbacks SPIE Medical Imaging 94190Y-94190Y-7 2015
206. Zhang, Ling; Wahle, Andreas; Chen, Zhi; Lopez, John; Kovarnik, Tomas; Sonka, Milan; Location-specific prediction of vulnerable plaque using IVUS, virtual histology, and spatial context Biomedical Imaging (ISBI), 2016 IEEE 13th International Symposium on 1354-1358 2016
207. Kashyap, Satyananda; Oguz, Ipek; Sonka, Milan; Statistical shape analysis of automatically segmented femur bones: Data from the osteoarthritis initiative Biomedical Imaging (ISBI), 2016 IEEE 13th International Symposium on 651-655 2016
208. Chen, Zhi; Wahle, Andreas; Zhang, Ling; Kovarnik, Tomas; Lopez, John J; Sonka, Milan; Comprehensive serial study of dynamic remodeling of atherosclerotic coronary arteries using IVUS SPIE Medical Imaging 97880Y-97880Y-6 2016
209. Miria, Mohammad Saleh; Ghayoora, Ali; Johnsona, Hans J; Sonkaa, Milan; Comparative study of multimodal intra-subject image registration methods on a publicly available database Proc. of SPIE Vol 9788 97881Z-1 2016
210. Oguz, Ipek; Zhang, Li; Abramoff, Michael D; Sonka, Milan; Optimal retinal cyst segmentation from OCT images SPIE Medical Imaging 97841E-97841E-7 2016
211. L Zhang, M Sonka, L Lu, RM Summers, J Yao: Combining fully convolutional networks and graph-based approach for automated segmentation of cervical cell nuclei, Biomedical Imaging (ISBI 2017), 2017 IEEE 14th International Symposium on, p. 406-409, 2017
212. Z Guo, S Kashyap, M Sonka, I Oguz: Machine learning in a graph framework for subcortical segmentation, Proceedings of SPIE—the International Society for Optical Engineering 10133, 2017

213. Quo, Z., Zhang, L., Lu, L., Bagheri, M., Summers, R. M., Sonka, M., Yao, J. (2018). Deep LOGIS-MOS: Deep learning graph-based 3D segmentation of pancreatic tumors on CT scans. *Biomedical Imaging (ISBI 2018)*, 2018 IEEE 15th International Symposium on (pp. 1230–1233).
214. Kim, Y., Patwardhan, K. A., Beichel, R. R., Smith, B. J., Mart, C., Plichta, K. A., Chang, T., Sonka, M., Graham, M. M., Magnotta, V., others (2017). Development of a radiobiological evaluation tool to assess the expected clinical impacts of contouring accuracy between manual and semi-automated segmentation algorithms. *Engineering in Medicine and Biology Society (EMBC), 2017 39th Annual International Conference of the IEEE* (pp. 3409–3412).
215. Lee, Kyungmoo; Sohn, Elliott H; Zhang, Honghai; Warren, Alexis K; Wahle, Andreas; Whitmore, S Scott; Sonka, Milan; Abramoff, Michael D; Multiresolution LOGISMOS graph search for automated choroidal layer segmentation of 3D macular OCT scans *Medical Imaging 2020: Image Processing 11313 113130B 2020 International Society for Optics and Photonics*
216. Guo, Zhihui; Zhang, Honghai; Chen, Zhi; van der Plas, Ellen; Gutmann, Laurie; Thedens, Daniel; Nopoulos, Peggy; Sonka, Milan; FilterNet: A Neighborhood Relationship Enhanced Fully Convolutional Network for Calf Muscle Compartment Segmentation. *CoRR 2020*

Abstracts:

1. Hlavac, V., Matousek, L., Sonka, M.: Digital Processing of the Kirlian Phenomenon in Psychiatry. In: *Proceedings of International Conf. Computer Aided Medical Decision Making - Abstracts, Prague, 1985.*
2. Sonka, M.: Hybrid Texture Recognition. In: *Proceedings of International Conf. Computer Aided Medical Decision Making - Abstracts, Prague, 1985.*
3. Hlavac, V., Sonka, M., Woska, J.: Linking Raster Image Analysis to Computer Graphics. In: *Proceedings of 3rd Int. Conf. on Automatic Image Processing - Computer Analysis of Images and Patterns, Scientific-Technological Society for Measurement and Automatic Control, Leipzig, September 1989, pp. 152–153.*
4. Parkkinen, J., Sonka, M., Cohen, G., Ehrhardt, J.C., Andreasen, N.: MRI Brain Cortical Structure Shape Analysis. In: *IMIA '90 - Int. Conf. on Mathematical Approaches to Brain Functioning Diagnostics, Prague September 1990.*
5. Parkkinen, J., Cohen, G., Sonka, M., Andreasen, N.: Segmentation of MR Brain Images. In: *Proceedings of the Annual IEEE-EMBS Conf., Orlando, FL, 1991, pp.71–72.*
6. Tadikonda, S.K., Sonka, M., Collins, S.M.: Efficient Coronary Border Detection Using Heuristic Graph Searching. *Proceedings of 14th International Conference IEEE Engineering in Medicine and Biology Society, vol. 14, Paris, France, pp. 1897–1899, 1992.*
7. Sonka, M., Winniford, M.D., Wilbricht, C.J., Collins, S.M.: Simultaneous Detection of Left and Right Coronary Borders: A Robust Approach to Automated Angiographic Analysis. *Circulation, 86(4):I-121, 1992.*
8. Tadikonda, S.K., Sonka, M., Collins, S.M.: Genetic Algorithms in Image Understanding. *Iowa Academy of Science Annual Meeting, Cedar Falls, IA, 1993.*
9. Sonka, M., Winniford, M.D., Zhang, X., Collins, S.M.: Automated Detection of Coronary Lumen Centerlines in Complex Angiograms. *Circulation, 88(4):I-653, 1993.*

10. Tadikonda, S.K., Sonka, M., Collins, S.M.: Region Merging in Medical Image Segmentation and Interpretation. Proceedings of 15th Annual Conference Engineering in Medicine and Biology, vol. 15, San Diego, CA, pp. 600–601, 1993.
11. Tadikonda, S.K., Sonka, M., Zhang, X., Collins, S.M.: Assessment of Vessel Complexity in Knowledge-Based Coronary Border Detection. Proceedings of 15th Annual Conference Engineering in Medicine and Biology, vol. 15, San Diego, CA, pp. 158–159, 1993.
12. Sonka, M., Zhang, X., Siebes, M., Bissing, M.S., DeJong, S.C., Collins, S.M., McKay, C.R.: Semi-Automated Detection of Coronary Arterial Wall and Plaque Borders in Intravascular Ultrasound Images (abstract). *Circulation* 90(4):I-550,1994.
13. Sonka, M., Reddy, G., Winniford, M.D., Collins, S.M.: An Improved Approach to Automated Analysis of Small Diameter Vessels (abstract). *Circulation* 90(4):I-487, 1994.
14. Sonka, M., Park, W., Hoffman, E.A.: Automated Detection of the Intrathoracic Airway Tree from Volumetric X-ray CT Images (abstract). *Annals of Biomedical Engineering* 23 (Suppl 1):S-19, 1995.
15. Sonka, M., Tadikonda, S.K., Collins, S.M.: Knowledge-Based Interpretation of MR Brain Images. Proceedings IPMI'95, Ile de Berder, France, Kluwer Academic Publishers, pp. 407–408, 1995
16. Flaum, M., Sonka, M., Arndt, S., Cizadlo, T., Stoneall, S. and Andreasen, N.C.: A new automated method of identifying neuroanatomic regions of interest on imaging data (abstract), 34th Annual meeting of the American College of Neuropsychopharmacology, p. 233, 1995.
17. McKay, C.R., Zhang, X., Liang, W., DeJong, S., Spencer, K., Kerber, R.E., Sonka, M.: Use of a New Semi-Automated Method to Determine Regional Left Ventricular Wall Thickening from Intracardiac Ultrasound Images (abstract). *J. Am. Coll. Cardio.*, Vol. 27 (Suppl. A), p. 240A, 1996.
18. Sonka, M., Zhang, X., DeJong, S., Collins, S.M., McKay, C.R.: Automated Detection of Coronary Wall and Plaque Borders in ECG-gated Intravascular ultrasound Pullback Sequences (abstract). *Circulation*, Vol. 94(8), Supplement – p. I-653, 1996.
19. Prause, G., DeJong, S., McKay, C.R., Sonka, M.: Geometrically Correct 3-D Reconstruction of Tortuous Coronary Arteries (abstract). *Circulation*, Vol. 94(8), Supplement – p. I-255, 1996.
20. R. Uppaluri, M. Sonka, E. A. Hoffman, T. Mitsa, C. Dayton, G. W. Hunninghake, and G. McLennan, Quantitative assessment in interstitial lung disease using the Multiple Feature (MF) method. *Am. J. Respiratory and Critical Care Medicine*, vol. 155(4), pp. A322, 1997.
21. R. Uppaluri, P. G. Hartley, E. A. Hoffman, M. Sonka, and G. McLennan, Validation of AMFM: A quantitative, regional assessment of pulmonary parenchymal pathology from HRCT. *Proc. Radiological Society of North America*, Vol. 205(p), p.481, 1997.
22. P. M. Kanani, J. J. Allan, W. Liang, R. E. Kerber, M. Sonka, M., C. R. McKay: Left Ventricular Volumes Measured from Intracardiac Echocardiography Images using Novel Geometric Methods, Automated Border Detection and 3D Reconstruction (abstract). *J. Am. Coll. Cardio.*, Vol. 29 (Suppl. A), p. 119A, 1997.
23. Sonka, M., Zhang, X., DeJong, S., Collins, S.M., McKay, C.R.: Automated Determination of Plaque Composition from Intravascular Ultrasound Images and Pullback Sequences (abstract). *Circulation* 95, Supplement – I-588, 1997.
24. W. Liang, R. M. Lauer, M. Sonka: Automated analysis of brachial ultrasound image sequences (abstract), *Circulation (Supplement)*, I-136, 1998.

25. M. Sonka, A. Wahle, G. P. M. Prause, S. C. DeJong, C. R. McKay, Biplane Angiography and Intravascular Ultrasound Data Fusion: Assessment of Catheter Twist (abstract), *Circulation (Supplement)*, I-508, 1998.
26. Lauer, R.M. Liang, W., Sonka, M.: Semi-automated measurement of flow-mediated brachial artery vasodilatation, abstract, AHA-Epidemiology conference, 1998.
27. R. Uppaluri, G. McLennan, M. Sonka, E.A. Hoffman, Objective quantitative assessment of pulmonary parenchyma by HRCT (abstract). *Radiology*, vol. 209(P), pp. 550, 1998.
28. M. Sonka, R. Stefancik, S. Tadikonda: Feasibility of Automated Separation of Arteries and Veins Using a Graph Searching Technique. *Proceedings of ISMRM*, June 1999.
29. Sonka, M., Liang, W., Lauer, R.: Flow-mediated Dilatation of Brachial Arteries: Automated Assessment of Measurement Quality, *European Congress of Radiology*, March 2000, Springer, C-016, p. 441, 2000.
30. P. Stone, A. Coskun, S. Kinlay, A. Askari, J. Wang, M. Sonka, S. Ilegbusi, C.L. Feldman: Quantification of Areas of Low Endothelial Shear Stress in Human Coronary Arteries in Vivo to predict Progression of Atherosclerosis and Formation of Vulnerable Plaque (abstract). *Circulation – Supplement II*, Vol. 102, p. II-636, 2000.
31. H.G. Bosch, S.C. Mitchell, B.P.F. Lelieveldt, M. Sonka, F. Nijland, J.H.C. Reiber: Feasibility of fully automated border detection on stress echocardiograms by Active Appearance Models (abstract). *Circulation – Supplement II*, Vol. 102, p. II-633, 2000.
32. B.P.F. Lelieveldt, S.C. Mitchell, R.J. van der Geest, M. Sonka, and J.H.C. Reiber: Robust automatic detection of right- and left ventricular contours in short-axis cardiac MR images using Active Appearance Models (abstract), *Journal of Cardiovascular Magnetic Resonance*, vol 2(4), p. 302, 2000.
33. J. G. Bosch, S. Mitchell, B. P. F. Lelieveldt, M. Sonka, F. Nijland, G. van Burken, and J. H. C. Reiber, "Feasibility of fully automated border detection on stress echocardiograms by Active Appearance Models," *European Heart Journal*, abstract supplement ESC, vol.21, p. 11, 2000.
34. J. G. Bosch, S. C. Mitchell, B. P. F. Lelieveldt, M. Sonka, F. Nijland, and J. H. C. Reiber, "Model-based automated border detection for quantitative stress echocardiography," *European Heart Journal*, abstract supplement ESC, vol.21, p. 37, 2000.
35. B. P. F. Lelieveldt, R. J. van der Geest, S. C. Mitchell, J. G. Bosch, M. Sonka, and J. H. C. Reiber, "Automated model-based segmentation of the right- and left ventricular contours in cardiac MR images," *European Heart Journal*, abstract supplement ESC, vol.21, p. 582, 2000.
36. J. G. Bosch, S. C. Mitchell, B. P. F. Lelieveldt, M. Sonka, F. Nijland, O. Kamp and J. H. C. Reiber, Fully automated border detection for stress echo by Active Appearance Models, *European Heart Journal* 1(12), p. S34, 2000.
37. B. P. F. Lelieveldt, S. C. Mitchell, R. J. van der Geest, M. Sonka, and J. H. C. Reiber, "Robust automatic detection of right- and left ventricular contours in short-axis cardiac MR images using Active Appearance Models," *Journal of Cardiovascular Magnetic Resonance*, vol 2(4), p. 302, 2000.
38. B. P. F. Lelieveldt, R. J. van der Geest, S. C. Mitchell, J.G. Bosch, M. Sonka, and J. H. C. Reiber, "Time-continuous automated contour detection of the endo- and epicardium in short-axis cardiac MR image sequences," *European Heart Journal*, abstract supplement ESC Stockholm, vol.22, p. 352, 2001.

39. B. P. F. Lelieveldt, R. J. van der Geest, S. C. Mitchell, J.G. Bosch, M. Sonka, and J. H. C. Reiber "Fully automated, time-continuous contour delineation of the endo- and epicardium in short-axis cardiac MR image sequences," *proc. ISMRM 2001*, p. 600.
40. B. P. F. Lelieveldt, R. J. van der Geest, S. C. Mitchell, M. Sonka, and J. H. C. Reiber, "Fully automatic detection of right- and left ventricular contours in short-axis cardiac MR images using Active Appearance Models," *Journal of Cardiovascular Magnetic Resonance*, vol 3(2), p. 104-105, 2001.
41. J.G. Bosch, S.C. Mitchell, B.P.F. Lelieveldt, F. Nijland, O.Kamp, M. Sonka, J.H.C. Reiber, "Fully automated endocardial border border detection in sequences of echocardiograms by Active Appearance Motion Models", *American Heart Association 74th Scientific Sessions, Circulation*, Vol. 104 - Supplement, p. II-652, November 2001.
42. S Kinlay, A U Coskun, M Sonka, A Wahle, O J Ilegbusi, J J Popma, P H Stone, C L Feldman, "Reproducibility of coronary endothelial shear stress measurements in vivo to determine progression of atherosclerosis". *American Heart Association 74th Scientific Sessions, Circulation*, Vol. 104 - Supplement, p. II-771, November 2001.
43. Chandran KB, Ramaswamy SD, Lai YG, Wahle A, Sonka M: Effect of Position and Flow Waveform on the Fluid Mechanics of a Stenosed Human Right Coronary Artery. 2001 ASME International Mechanical Engineering Congress and Exposition, American Society of Mechanical Engineers Number BED-23134, CD-ROM 2001.
44. M. Uzumcu, B.P.F. Lelieveldt, J.G. Bosch, S.C. Mitchell, M. Sonka and J.H.C. Reiber, "Time-Continuous Segmentation of Long- and Short-Axis Cardiac MR Image Sequences using Active Appearance Motion Models," *NVPHBV newsletter*, fall 2001
45. B. P. F. Lelieveldt, S. C. Mitchell, J. Bosch, R. J. van der Geest, M. Sonka, and J. H. C. Reiber, "Automatic detection of endo- and epicardial contours in short-axis cardiac MR data using 3D Active Appearance Models," *Journal of Cardiovascular Magnetic Resonance*, vol 4(1), p. 106-107, 2002.
46. M. Sonka, D. R. Thedens, C. Schulze-Bauer, G. Holzapfel, R. Stollberger, L. Bolinger, A. Wahle: Towards MR Assessment of Plaque Vulnerability: Image Acquisition and Segmentation, 10th Scientific Meeting of the International Society for Magnetic Resonance in Medicine, Berkeley, CA, ISMRM, 2002, 1570.
47. Coskun AU, Kinlay S, Clark ME, Sonka M, Wahle A, Ilegbusi OJ, Popma JJ, Kuntz RE, Feldman CL, Stone PH: Reproducibility of Three-Dimensional Lumen, Plaque, and Outer Vessel Reconstructions and of Endothelial Shear Stress Measurements In-Vivo to Determine Progression of Atherosclerosis. *American College of Cardiology, 51st Scientific Sessions, Atlanta GA, Journal of the ACC, Suppl. Volume 39, Number 5/A, Abstract 1127-2, March 2002*
48. Feldman CL, Kinlay S, Coskun AU, Clark ME, Sonka M, Wahle A, Ilegbusi OJ, Popma JJ, Kuntz RE, Stone PH: In-Vivo Prediction of Outward Remodeling in Native Portions of Stented Coronary Arteries Associated with Sites of High Endothelial Shear Stress at the Time of Deployment. *American College of Cardiology, 51st Scientific Sessions, Atlanta GA, Journal of the ACC, Suppl. Volume 39, Number 5/A, Abstract 834-4, March 2002*
49. Kinlay S, Coskun AU, Feldman CL, Clark ME, Sonka M, Wahle A, Ilegbusi OJ, Popma JJ, Kuntz RE, Stone PH: Endothelial Shear Stress Identified In-Vivo Within the Stent is Related to In-Stent Restenosis and Remodeling of Stented Coronary Arteries. *American College of Cardiology, 51st Scientific Sessions, Atlanta GA, Journal of the ACC, Suppl. Volume 39, Number 5/A, Abstract 1005-5, March 2002*

50. Stone PH, Coskun AU, Kinlay S, Clark ME, Sonka M, Wahle A, Ilegbusi OJ, Popma JJ, Kuntz RE, Feldman CL: Prediction of Sites of Progression of Native Coronary Disease In-Vivo Based on Identification of Sites of Low Endothelial Shear Stress. American College of Cardiology, 51st Scientific Sessions, Atlanta GA, Journal of the ACC, Suppl. Volume 39, Number 5/A, Abstract 1056-82, March 2002
51. C.R. Oost, B.P.F. Lelieveldt, G. Koning, M. Sonka, J.H.C. Reiber: Left ventricle contour detection in X-ray angiograms using Stepwise Multi-View Active Appearance Models, abstract NVPHBV newsletter, presented at fall meeting Dutch Image Processing and Pattern Recognition Society 2002.
52. C.R. Oost, B.P.F. Lelieveldt, G. Koning, M. Sonka, J.H.C. Reiber, "Left ventricle contour detection in X-ray angiograms using Active Appearance Models", abstract book STW symposium on Adaptive Solutions, p 18, 2002.
53. B.P.F. Lelieveldt, R.J. van der Geest, S.C. Mitchell, J.G. Bosch, M. Sonka, J.H.C. Reiber, "3D Active Appearance Models: fully automatic detection of endo- and epicardial contours in short-axis cardiac MR data", Proc ISMRM 2002, p. 1668, 2002.
54. J. Tschirren, K. Palagyi, E. Hoffman, M. Sonka: Fully automated segmentation, skeletonization, and branchpoint matching in human intrathoracic airway trees, Proc. Radiological Society of North America, Abstract 565, 2002.
55. J. J. Lopez, A. Wahle, E. C. Pennington, S. L. Meeks, J. M. Buatti, K. C. Braddy, J. M. Fox, T. M. H. Brennan, J. D. Rossen, and M. Sonka. Is target dosing attained with intracoronary brachytherapy? An IVUS 3D reconstruction analysis. American Heart Association, 75th Scientific Sessions 2002, Chicago IL, Circulation Suppl. 11, II-621, . 106(19), 2002.
56. Sonka M, Thedens DR, Schulze-Bauer CAJ, Holzapfel GA, Stollberger R, Bollinger L, Wahle A: Towards MR Assessment of Plaque Vulnerability: Image Acquisition and Segmentation. Tenth Meeting of the International Society for Magnetic Resonance in Medicine, Honolulu HI, ISMRM, Abstract 1570, Berkeley CA, 2002.
57. B.P.F. Lelieveldt, S.C. Mitchell, J.G. Bosch, R. van der Geest, M. Sonka, J.H.C. Reiber, Automatic detection of endo- and epicardial contours in short-axis cardiac MR data using 3D Active Appearance Models, Proc SCMR 2002, Journal of Cardiovascular Magnetic Resonance, vol. 4(1), p106-107, 2002.
58. S. D. Ramaswamy, A. Wahle, Y. G. Lai, M. E. Olszewski, K. C. Braddy, J. D. Rossen, M. Sonka, K. B. Chandran": Effect of Motion on the Fluid Dynamics in a Human Left Coronary Artery, 2003 BMES Annual Fall Meeting, Biomedical Engineering Society, 6.P4.36, CD-ROM, 2003.
59. S. D. Ramaswamy, A. Wahle, Y. G. Lai, M. E. Olszewski, T. M. H. Brennan, J. D. Rossen, M. Sonka, K. B. Chandran: Alterations in Arterial Motion and Flow Dynamics in a Coronary Artery Before and After Intervention, 2003 BMES Annual Fall Meeting, Biomedical Engineering Society, 6.P4.54, CD-ROM, 2003.
60. Bosch JG, Nijland F, Mitchell SC, Lelieveld BPF, Kamp O, Sonka M, Reiber JHC. Automated classification of wall motion abnormalities by automated border detection and analysis of left ventricular endocardial motion patterns. Abstract ASE 2003. Toronto, Canada, June 2003.
61. C.R Oost, B.P.F. Lelieveldt, M. Uzumcu, H. Lamb, J.H.C. Reiber, M. Sonka, Multi-View Active Appearance Models: Application to X-ray LV Angiography and Cardiac MRI, abstract book STW symposium on Adaptive Solutions, pp 26-27, 2003.

62. Bosch JG, Nijland F, Mitchell SC, Lelieveld BPF, Kamp O, Sonka M, Reiber JHC. Automated classification of wall motion abnormalities by automated border detection and analysis of left ventricular endocardial motion patterns. ASE 2003. Toronto/Las Vegas, J Am Soc Echocardiography 2003;16: 5 p.507.
63. Bosch JG, Nijland F, Kamp O, Burken G van, Sonka M, Reiber JHC. Automated classification of wall motion abnormalities by analysis of left ventricular endocardial motion patterns. Abstract ESC 2003. Vienna, 30. Eur Heart J 2003;24(abstract suppl) , p.203.
64. Bosch JG, Nijland F, Kamp O, Burken G van, Sonka M, Reiber JHC. Automated classification of wall motion abnormalities by analysis of left ventricular endocardial motion patterns. Abstract book Ned Ver v Cardiologie Scientific Meeting 2003. April 24-25 2003, p. 125.
65. Bosch JG, Nijland F, Mitchell SC, Lelieveld BPF, Kamp O, Sonka M, Reiber JHC. Automated classification of wall motion abnormalities by analysis of left ventricular endocardial contour motion patterns. Abstract 736 Euroecho 7, 2003, Barcelona, Spain. Eur J Echocardiography 2003; 4 suppl 1, p. S95.
66. H Zhang, L Bu, A Stolpen, M Sonka, S Ge: A semi-automatic real-time three-dimensional digital Doppler Method for measurement of flow volumes in children. Circulation, Supplement Vol 100, No 17, Oct. 2006, p. III-570.
67. H Shikata, M Sonka, A Delsing, G McLennan, E Hoffman: Pulmonary Vascular Tree Segmentation from Thoracic MDCT Images. Proceedings of RSNA 2004.
68. S Munns, L Bu, H Zhang, M Disterhoft, M Dixon, A Stolpen, M Sonka, L Mahiney, S Ge: Real-time three-dimensional echocardiography for assessment of left ventricular function in children. American College of Cardiology, 53rd Scientific Sessions, Journal of the ACC, Suppl. Volume 41, Abstract 1113-157, 2004.
69. Feldman CL, Coskun AU, Yeghiazarians Y, Kinlay S, Wahle A, Olszewski ME, Rossen JD, Sonka M, Popma JJ, Orav J, Kuntz RE, Stone PH: Remodeling Characteristics of Minimally Diseased Coronary Arteries are Consistent along the Length of the Artery. Transcatheter Cardiovascular Therapeutics, 16th Annual Scientific Symposium, Washington DC, American Journal of Cardiology, Suppl., Volume 94, Number 6, Page 117E, Abstract 252, September 2004.
70. Wahle A, Lopez JJ, Olszewski ME, Vigmostad SC, Braddy KC, Brennan TMH, Bokhari SW, Bennett JG, Holper EM, Rossen JD, Chandran KB, Sonka M: Inverse Relationship between Local Wall Shear Stress and Plaque Thickness in Coronary Arteries is Retained by Compensatory Enlargement in Early Atherosclerosis. American College of Cardiology, 54th Scientific Sessions, Orlando FL, Journal of the ACC, Volume 45, Number 3/A, Page 416A, Abstract 1126-138, February 2005.
71. Lopez JJ, Wahle A, Olszewski ME, Gualano S, Bokhari SW, Bennett JG, Vigmostad SC, Medina R, Sonka M: Differential Effects of Coronary Stenting on Calcified and Non-Calcified Vessels: Reanalysis of the Mechanism of Lumen Enlargement by Quantitative Analysis of Plaque Redistribution with 3-D IVUS/Angiography Fusion. Society for Cardiovascular Angiography and Interventions, 28th Annual Scientific Sessions, Ponte Vedra FL, Catheterization and Cardiovascular Interventions, Society for Cardiovascular Angiography and Interventions, 28th Annual Scientific Sessions, Ponte Vedra FL, Catheterization and Cardiovascular Interventions, Suppl. Volume 65, Number 1, Page 131, Abstract C-23, May 2005.
72. Liping Bu, Honghai Zhang, Michelle Disterhoft, Marika Klesic, Milan Sonka, Shuping Ge: A Real-Time Three-Dimensional Digital Doppler Method for Measurement of Flow Volumes Through Mitral Valve and Aortic Valve in Children. American College of Cardiology, 54th Scientific Sessions, Orlando FL, Journal of the ACC, Volume 45, Abstract 1110-83, February 2005.

73. P. H. Davis, J. D. Dawson, M. Sonka: Aortic Intimal-Medial Thickness is Associated with Body Mass Index and Systolic Blood Pressure in Normal Adolescents. American Heart Association, 78th Scientific Sessions 2005, Dallas TX, Circulation Suppl. 2005.
74. Y Xu, M Sonka, E vanBeek, G McLennan, J Guo, E A Hoffman: MDCT-based Computer-aided Detection of Interstitial Lung Disease Using 3-Dimensional Texture Features, Proc. of RSNA, p. 714, 2005.
75. Lopez J J, Gualano S, De A, Everett M, Olszewski M E, Vigmostad S C, Cinar S, Lee K, Sonka M, Wahle A: Is Peri-procedural Cardiac Enzyme Release related to Atherosclerotic Burden? Lack of Correlation with 3-D IVUS Reconstruction. Transcatheter Cardiovascular Therapeutics, 18th Annual Scientific Symposium, Washington DC, American Journal of Cardiology, Suppl. Volume 98, Number 8, Page 193M-194M, Abstract 496, October 2006.
76. Olszewski M E, Wahle A, Walker M J, Lopez J J, Rossen J D, Sonka M, Vembar M: Studies Comparing Coronary Multidetector Computed Tomography and Intravascular Ultrasound: Implications of Imaging Geometry. Proc. of RSNA, p. 675, 2006.
77. Zhang H, Walker N E, Thomas M T, Stolpen A H, Wahle A, Scholz T D, Sonka M: Four-Dimensional Active Appearance Model Segmentation of Cardiac Magnetic Resonance Images. American Heart Association, Scientific Sessions, Chicago IL, Circulation, Suppl. 2006.
78. Zhao F, Zhang H, Wahle A, Thomas M T, Stolpen A H, Scholz T D, Sonka M: Computer-Aided Diagnosis of Congenital Aortic Disease using Aortic Shape and Motion. American Heart Association, Scientific Sessions, Chicago IL, Circulation, Suppl. 2006.
79. Vigmostad S C, Wahle A, Olszewski M E, Rossen J D, Sonka M, Chandran K B: Effects of Local Geometry on the Fluid Dynamics of Coronary Artery Segments with Implanted Stents. 5th World Congress of Biomechanics, Munich, Journal of Biomechanics, Suppl. Volume 39, Number 1, Page S401, Abstract 5328, 2006.
80. Zhao F, Stolpen AH, Thedens DR, Zhang H, Scholz TD, Wahle A, Sonka M.: Automated Segmentation of 4D Cine MRI: Application to the Aortic Root and Quantitative Comparison of Normal Subjects and Patients with Marfan Syndrome. Abstracts, Joint Annual Meeting, International Society for Magnetic Resonance in Medicine and European Society for Magnetic Resonance in Medicine and Biology, p. 504 - Abstract # 2593, Berlin, Germany, 2007.
81. M. Sonka, X. Zhang, S. Millington: Three-dimensional segmentation and analysis of articular cartilage. Proceedings of the Workshop on Imaging-Based Measures of Osteoarthritis, P104, Paracelsus University, Salzburg Austria, 2007.
82. Y. Yin, X. Zhang, M. Sonka: Fully three-dimensional segmentation of articular cartilage performed simultaneously in all bones of the joint. Proc. of OARSI World Congress on Osteoarthritis, Abstract OARSI-267, 2007.
83. Zhao F, Zhang H, Wahle A, Thomas MT, Stolpen AH, Scholz TD, Sonka M: Classification of Aortic Connective Tissue Disorder from 4D MR Image Data based on Principal Component Analysis and Support Vector Machine. CARS 2007, 21st International Congress and Exhibition, Berlin, Germany, International Journal of Computer Assisted Radiology and Surgery, Suppl. Volume 2, Number 1, Page S519-S520, Abstract, June 2007
84. De A, Wahle A, Gualano S, Olszewski ME, Truong V, Vigmostad SC, Lee K, Cinar S, Sonka M, Lopez JJ: Can IVUS Derived Parameters of Plaque Burden Predict Changes in Post PCI Coronary Flow in Stable Angina? - A 3D IVUS Reconstruction Analysis. Society for Cardiovascular Angiography

and Interventions, 30th Annual Scientific Sessions, Catheterization and Cardiovascular Interventions, Suppl. Volume 69, Page 6, Abstract C-27, May 2007

85. M. Sonka: Quantitative medical image analysis for early detection, diagnosis, outcome prediction, and treatment. *Medical Physics*, Vol. 35(6), TH-C-342-03, p. 2978 (abstract).
86. Q. Song, X. Wu, Y. Yin, M. Chen, Y. Kim, J.E. Bayouth, J.M. Buatti, R.A.C. Siochi, and M. Sonka, Simultaneous Segmentation of Bladder and Prostate Using Globally Optimal 3-D Graph Search Method, 50th Annual Meeting of the American Society for Therapeutic Radiology and Oncology (ASTRO), Boston, MA, September 2008 (abstract).
87. M. Sonka: Knowledge-based approaches to quantitative medical image analysis and image-based decision making. *Frontiers in Algorithmics*. 2nd International Workshop. LNCS 5059, 2008., p. 3, (Abstract of Keynote Talk).
88. M. K. Garvin, M. Sonka, R. H. Kardon, X.Wu, Y. H. Kwon, S. R. Russell, and M. D. Abramoff, "Three-dimensional analysis of SD OCT: Thickness assessment of six macular layers in normal subjects," *Invest Ophthalmol. Vis. Sci.*, E-Abstract 1879, May 2008.
89. A. Wahle, R. W. Downe, K. Lee, S. Cinar, T. M. H. Brennan, A. De, M. Everett, S. Nathan, J. D. Rossen, M. Sonka, and J. J. Lopez. Revisiting the coronary arterial hot-spot hypothesis with angiography-IVUS fusion methodology: Is proximal vessel plaque accumulation more closely related to vessel location or vessel size? American Heart Association, Scientific Sessions, New Orleans LA, *Circulation (Supplement)*, 118(18):S743, October 2008. Abstract 2545.
90. A. Wahle, R. W. Downe, K. Lee, S. Cinar, T. M. H. Brennan, A. De, M. Everett, S. Nathan, J. D. Rossen, M. Sonka, and J. J. Lopez. Understanding spatial location of Glagov-significant coronary plaque accumulation as measured with angiography-IVUS fusion: Is significant cross-sectional area narrowing more likely to occur at proximal vessel clinical hot spots? American Heart Association, Scientific Sessions, New Orleans LA, *Circulation (Supplement)*, 118(18):S746, October 2008. Abstract 2556.
91. M. K. Garvin, M. Sonka, R. H. Kardon, X. Wu, Y. H. Kwon, S. R. Russell, and M. D. Abramoff, "Threedimensional analysis of SD OCT: Thickness assessment of six macular layers in normal subjects," *Invest Ophthalmol Vis Sci*, pp. E-Abstract 1879, 2008.
92. M. K. Garvin, M. Niemeijer, R. H. Kardon, M. Sonka, and M. D. Abramoff, "Automatically correcting for the presence of retinal vessels on spectral-domain optical coherence tomography images decreases variability of the segmented retinal layers," *Invest Ophthalmol Vis Sci*, pp. E-abstract 1099, 2009.
93. M. Niemeijer, M. Sonka, M. K. Garvin, B. van Ginneken, and M. D. Abramoff, "Automated segmentation of the retinal vasculature in 3D optical coherence tomography images," *Invest Ophthalmol Vis Sci*, pp. E-Abstract 1832, 2008.
94. K. Lee, M. Niemeijer, M. K. Garvin, Y. H. Kwon, M. Sonka, and M. D. Abramoff, "Automated optic disc segmentation from 3D SD-OCT of the optic nerve head (ONH)," *Invest. Ophthalmol. Vis. Sci.*, E-abstract, May 2009.
95. Yin Y., Zhang X., Anderson D.D., Williams R.M., Sonka M.: Automated Segmentation of Knee Joint Cartilage in OAI MR Images. The 4th International Workshop on Imaging-Based Measures of Osteoarthritis, University of British Columbia, p. 37, 2010.
96. Yin Y., Zhang X., Anderson D.D., Williams R.M., Sonka M.: Automated Segmentation of the Meniscus From MR Images. The 4th International Workshop on Imaging-Based Measures of Osteoarthritis, University of British Columbia, p. 43, 2010.

97. Meindert Niemeijer, Mona K. Garvin, Zhihong Hu, Kyungmoo Lee, Milan Sonka<sup>1B</sup>, Michael D. Abramoff: Automated Registration Of Fundus Photographs To 3D OCT Projection Images IOVS 2011, E-Abstract 1304.
98. Bhavna J. Antony, Young H. Kwon, Kyungmoo Lee, Michael D. Abramoff, Milan Sonka, Mari Long, Mona K. Garvin: Organizing Section/Contributing Sections: Multidisciplinary Ophthalmic Imaging Group, IOVS 2011, E-Abstract 1311.
99. Kyungmoo Lee, Zhihong Hu, Mona K. Garvin, Randy H. Kardon, Michael D. Abramoff, Milan Sonka: Proper Registration of Macular and Peripapillary OCT Scans Provides Reliable Correlation between Macular and PP Retinal Layer Thickness along Corresponding Nerve Fiber Bundle Directions, IOVS 2011, E-Abstract 1313.
100. Mona K. Garvin, Michael D. Abramoff, Kyungmoo Lee, Meindert Niemeijer, Milan Sonka, Young H. Kwon: A Structure-Structure-Based Correlation Map Using SD-OCT Resembles Nerve Fiber Bundle Patterns in Glaucoma Subjects, IOVS 2012, E-Abstract 667.
101. Henriët Springelkamp, Kyungmoo Lee, Wishal D. Ramdas, Johannes R. Vingerling, Caroline C. Klaver, Milan Sonka, Michael D. Abramoff, Nomdo M. Jansonius: Optimizing The Information Yield Of 3D OCT In Glaucoma, IOVS 2012, E-Abstract 684.
102. Mari Long, Kyungmoo Lee, Mona K. Garvin, Michael D. Abramoff, Milan Sonka, Young H. Kwon: Reproducibility Of SD OCT Parameters In Glaucoma Subjects Using Custom-developed Segmentation Algorithms And Commercial Cirrus Software, IOVS 2012, E-Abstract 690.
103. Nazli Demirkaya, Hille W. van Dijk, Reinier O. Schlingemann, Michael D. Abramoff, Mona K. Garvin, Milan Sonka, Frank D. Verbraak: Pericentral Ganglion Cell Layer Thickness Decreases with Age in Normal Eyes as Measured by Spectral-Domain Optical Coherence Tomography, IOVS 2012, E-Abstract 823.
104. Li Zhang, Kyungmoo Lee, Xinjian Chen, Meindert Niemeijer, Michael D. Abramoff, Milan Sonka: Semi-automated Segmentation of Choroidal Vasculature in SD-OCT images, IOVS 2012, E-Abstract 2117.
105. Kyungmoo Lee, Young Kwon, Mona K. Garvin, Meindert Niemeijer, Milan Sonka, Michael Abramoff: Correlation of Retinal Ganglion Cell Damage and Optic Nerve Axonal Loss in Early Glaucoma Using SD-OCT, IOVS 2012, E-Abstract 2150.
106. Frank D. Verbraak Hille Dijk v, Mona K. Garvin, Milan Sonka, Hans Vries de, Reinier Schlingemann, Michael D. Abramoff: Progressive Loss of Inner Retinal Layer Thickness In Type 1 Diabetic Patients With No Or Minimal Nonproliferative Diabetic Retinopathy Over 5 Years Of Follow-up, IOVS 2012, E-Abstract 2866.
107. Meindert Niemeijer, Kyungmoo Lee, Xinjian Chen, Li Zhang, Milan Sonka, Michael D. Abramoff: Automated Estimation of Fluid Volume in 3D OCT Scans of Patients with CNV Due to AMD, IOVS 2012, E-Abstract 4074.
108. Xinjian Chen, Li Zhang, Kyungmoo Lee, Meindert Niemeijer, Elliot Sohn, John Chen, Milan Sonka, Michael D. Abramoff: Automated Detection of ELM Disruption Regions in 3D OCT Images, IOVS 2012, E-Abstract 4080.
109. Milan Sonka, Xinjian Chen, Meindert Niemeijer, Li Zhang, Kyungmoo Lee, Mona K. Garvin, Andreas Wahle, Stephen R. Russell, James C. Folk, Michael D. Abramoff: Automated Segmentation of Fluid Regions In Choroidal Neovascularization In SD-OCT, IOVS 2012, E-Abstract 4085.

110. Bhavna J. Antony, Michael D. Abramoff, Milan Sonka, Pavlina Kemp, Young H. Kwon, Mona K. Garvin: Obtaining Improved 3-D SD-OCT Intraretinal Layer Segmentation Results Through the Use of Textural Features in a Graph-Theoretic Approach, IOVS 2012, E-Abstract 4091.
111. John J. Chen, Kyungmoo Lee, Meindert Niemeijer, Milan Sonka, Michael D. Abamoff, Elliott H. Sohn: Variability in measurements of Diabetic Macular Edema in SD-OCT using a 3D segmentation algorithm, IOVS 2012, E-Abstract 4669.
112. Mona K. Garvin; Kyungmoo Lee; Trudy L. Burns; Michael D. Abramoff; Andreas Wahle; Milan Sonka; Young H. Kwon: Reproducibility of SD-OCT-Based Ganglion-Cell-Complex-Layer Thickness in Early Glaucoma using Commercial and Custom Segmentation Algorithms, IOVS 2013, E-Abstract 231.
113. Kyungmoo Lee; Young H. Kwon; Michael D. Abramoff; Mona K. Garvin; Milan Sonka: Correction of the Retinal Angle in SD-OCT of Glaucomatous Eyes Provides Better Reproducibility of Optic Nerve Head Parameters, IOVS 2013, E-Abstract 1450.
114. Bianca S. Gerendas; Sebastian M. Waldstein; Bilal Haj Najeeb; Li Zhang; Hrvoje Bogunovic; Michael D. Abramoff; Christian Simader; Milan Sonka; Ursula Schmidt-Erfurth: Posterior Pole Choroidal Vasculature (CV) Assessed By Automated Choroidal Vessel Segmentation In Standard Clinical Spectral-Domain Optical Coherence Tomography (SD-OCT) In Patients With Diabetic Macular Edema (DME), IOVS 2013, E-Abstract 3162.
115. Hrvoje Bogunovic; Michael D. Abramoff; Elliott H. Sohn; Milan Sonka: Predicting the Visual Acuity of Patients with Diabetic Macular Edema from the Measured Disruption Status of External Limiting Membrane on the SD-OCT Scan, IOVS 2013, E-Abstract 3602.
116. Li Zhang; Gabrielle H. Buitendijk; Kyungmoo Lee; Andreas Wahle; Milan Sonka; Caroline C. Klaver; Michael D. Abramoff: Automated quantification of drusen and choroid using clinical SD-OCT, IOVS 2013, E-Abstract 5495.
117. Adnan Rashid; Ursula Schmidt-Erfurth; Bianca S. Gerendas; Sebastian M. Waldstein; Hrvoje Bogunovic; Andreas Wahle; Christian Simader; Kyungmoo Lee; Milan Sonka; Michael D. Abramoff: Total Retinal Thickness Using Iowa Reference Algorithm: Measurement Reproducibility in 5 SD- OCT Scanners, IOVS 2013, E-Abstract 5503.
118. Xiayu Xu; Li Zhang; Kyungmoo Lee; Andreas Wahle; Xinjian Chen; Xiaodong Wu; Michael D. Abramoff; Milan Sonka: Automated choroidal neovascularization associated abnormality detection and quantitative analysis from clinical SD-OCT, IOVS 2013, E-Abstract 5510.
119. Katrina A. Mears; Li Zhang; Kyungmoo Lee; Xiayu Xu; Milan Sonka; Michael D. Abramoff: Automated Segmentation of Sub-Retinal Layers in Age-related Macular Degeneration, IOVS 2013, E-Abstract 5531.
120. Ursula Schmidt-Erfurth; Christopher Schuetze; Sebastian M. Waldstein; Bianca S. Gerendas; Christian Simader; Li Zhang; Michael D. Abramoff; Milan Sonka; Bernhard Baumann; Christoph K. Hitzenberger: Morphologic effects of anti-VEGF therapy on retinal pigment epithelium (RPE) and choroidal vasculature (CV) in neovascular age-related macular degeneration (AMD), IOVS 2013, E-Abstract 6275.
121. Wahle, Andreas; Chen, Zhi; Wilk, Michael; Downe, Richard; Masiarova, Tatiana; Skalicka, Hana; Kral, Ales; Jerabek, Stepan; Sonka, Milan; Lopez, John; VESSEL-BASED BINARY CLASSIFICATION OF CORONARY REMODELING AS POSITIVE OR NON-POSITIVE DOES NOT FULLY REFLECT VESSEL BEHAVIOR: A LONGITUDINAL 3-D IVUS/ANGIOGRAPHY STUDY WITH

THREE REMODELING GROUPS Journal of the American College of Cardiology 63 12S 2014 Journal of the American College of Cardiology

122. Chen, Zhi; Wahle, Andreas; Downe, Richard; Masiarova, Tatiana; Skalicka, Hana; Vimr, Ross; Kral, Ales; Jerabek, Stepan; Lopez, John; Sonka, Milan; 3D ANGIOGRAPHY/IVUS-VH BASED ANALYSIS OF TEMPORAL CHANGES IN NECROTIC CORE CONTENT AND LUMINAL DISTRIBUTION WITH STATIN TREATMENT Journal of the American College of Cardiology 63 12S 2014 Journal of the American College of Cardiology
123. Wilk, Michael; Kovarnik, Tomas; Chen, Zhi; Downe, Richard; Masiarova, Tatiana; Vimr, Ross; Wahle, Andreas; Sonka, Milan; Lopez, John; UNDERSTANDING THE ROLE OF DEMOGRAPHIC, INFLAMMATORY, AND PLAQUE PHENOTYPIC FACTORS ON CORONARY ATHEROSCLEROTIC VESSEL REMODELING: A 3D IVUS-VH/ANGIOGRAPHIC FUSION ANALYSIS WITH INTERMEDIATE TERM FOLLOW-UP Journal of the American College of Cardiology 63 12S 2014 Journal of the American College of Cardiology
124. Kovarnik, Tomas; Chen, Zhi; Wahle, Andreas; Skalicka, Hana; Kral, Ales; Jerabek, Stepan; Sonka, Milan; Horak, Jan; Linhart, Ales; TCT-353 Pathologic Intimal Thickening Plaque Phenotype-Not As Innocent As We Thought. Study With 3D Intravascular Ultrasound And Virtual Histology Journal of the American College of Cardiology 64 11 B103 2014
125. Choi, Catherine; Zhang, Li; Abramoff, Michael David; Sonka, Milan; Shifera, Amde; Kay, Christine Nichols; Efficacy of Aflibercept in Refractory Wet Age-Related Macular Degeneration Investigative Ophthalmology & Visual Science 55 13 3936-3936 2014
126. Wahle, Andreas; Harding, Adam T; Lee, Kyungmoo; Garvin, Mona K; Alward, Wallace LM; Fingert, John H; Kopel, Teresa R; Abramoff, Michael David; Kwon, Young H; Sonka, Milan; Supporting Glaucoma Structure/Function Research with a Unified OCT, Fundus, and Visual Field Database Investigative Ophthalmology & Visual Science 55 13 4821-4821 2014
127. Rashid, Adnan; Schmidt-Erfurth, Ursula; Gerendas, Bianca; Waldstein, Sebastian M; Wahle, Andreas; Simader, Christian; Lee, Kyungmoo; Wang, Kai; Sonka, Milan; Abramoff, Michael David; Reproducibility of Total Retinal Thickness in 5 SD-OCT Scanners using Iowa Reference Algorithm Investigative Ophthalmology & Visual Science 55 13 4786-4786 2014
128. Lee, Kyungmoo; Buitendijk, Gabrielle HS; Springelkamp, Henriët; Sonka, Milan; Vingerling, Johannes R; Klaver, Caroline CW; Abramoff, Michael David; Relationship between Intensity Based Image Quality Indices of Retinal SD-OCT and Performance of Automated Retinal Layer Segmentation Investigative Ophthalmology & Visual Science 55 13 4789-4789 2014
129. Miri, Mohammad Saleh; Kwon, Young H; Wang, Jui-Kai; Abramoff, Michael David; Sonka, Milan; Garvin, Mona K; Computing the Minimum Rim Width: Should the Border Tissue Be Considered? Investigative Ophthalmology & Visual Science 55 13 4750-4750 2014
130. Bogunovic, Hrvoje; Abramoff, Michael David; Wu, Xiaodong; Kemp, Pavlina S; Garvin, Mona K; Alward, Wallace LM; Fingert, John H; Kwon, Young H; Sonka, Milan; Mosaicing and Multi-Field Layer Segmentation of 3D Retinal OCT Investigative Ophthalmology & Visual Science 55 13 4813- 4813 2014
131. Zhang, Li; Abramoff, Michael David; Waldstein, Sebastian M; Gerendas, Bianca; Glodan, Ana- Maria; Simader, Christian; Schmidt-Erfurth, Ursula; Sonka, Milan; Reproducibility of automated choroidal thickness measurements: swept-source OCT and spectral-domain OCT using enhanced depth imaging Investigative Ophthalmology & Visual Science 55 13 4796-4796 2014

132. Zhang, Ling; Kovarnik, Tomas; Hirai, Taishi; Chen, Zhi; Porcaro, Katie; Kaminski, John; Hawn, Stephen; Agrawal, Anoop; Downe, Richard; Wahle, Andreas; Is Plaque Rupture Cavity Size Related to Plaque Composition? 2014
133. Lee, Kristine E; Lee, Kyungmoo; Wahle, Andreas; Meuer, Stacy M; Kulkarni, Amruta; Klein, Barbara EK; Sonka, Milan; Abramoff, Michael David; Klein, Ronald; Axial length associations with retinal layer thicknesses from spectral domain optical coherent tomography (SD-OCT) macular scans in the Beaver Dam Eye Study (BDES) Investigative Ophthalmology & Visual Science 56 7 906-906 2015
134. Miri, Mohammad Saleh; Bogunovic, Hrvoje; Kwon, Young H; Abramoff, Michael David; Sonka, Milan; Garvin, Mona K; Minimum rim width better correlates with structural and functional measurements than horizontal rim width Investigative Ophthalmology & Visual Science 56 7 641-641 2015
135. Lee, Kyungmoo; Buitendijk, Gabrielle HS; Bogunovic, Hrvoje; Springelkamp, Henriette; Hofman, Albert; Wahle, Andreas; Sonka, Milan; Vingerling, Johannes R; Klaver, Caroline CW; Abramoff, Michael David; Validation of Segmentability Index for Automated Prediction of Segmentation Reliability in SD-OCT Scans Investigative Ophthalmology & Visual Science 56 7 5292-5292 2015
136. Abramoff, Michael David; Bogunovic, Hrvoje; Kwon, Young H; Critser, Brice; Garvin, Mona K; Sonka, Milan; Repeatability of Automated OCT-based 24-2 Visual Threshold Estimation in Patients with Glaucoma Investigative Ophthalmology & Visual Science 56 7 1696-1696 2015
137. Bogunovic, Hrvoje; Sonka, Milan; Zhang, Li; Abramoff, Michael David; Prediction of Future Visual Acuity from OCT Images during Anti-VEGF Induction Phase in Patients with Exudative Age-Related Macular Degeneration Investigative Ophthalmology & Visual Science 56 7 1519-1519 2015
138. Meuer, Stacy M; Lee, Kyungmoo; Wahle, Andreas; Lee, Kristine E; Kulkarni, Amruta; Klein, Barbara EK; Sonka, Milan; Abramoff, Michael David; Klein, Ronald; Age and sex distribution of retinal layer thickness from spectral domain optical coherence tomography (SD-OCT) macular scans in the Beaver Dam Eye Study (BDES) Investigative Ophthalmology & Visual Science 56 7 1805-1805 2015
139. Wahle, Andreas; Lee, Kristine E; Lee, Kyungmoo; Zhang, Li; Bogunovic, Hrvoje; Harding, Adam T; Scheetz, Todd E; Sonka, Milan; Klein, Ronald; Abramoff, Michael David; Use of XNAT to generate phenotype data from OCT scans for use with genetic association analyses Investigative Ophthalmology & Visual Science 56 7 1261-1261 2015
140. Woo, Vincent; Chen, Zhi; Hirai, Taishi; Weber, Joseph R; Kovarnik, Tomas; Wahle, Andreas; Sonka, Milan; Lopez, John J; TCT-355 An Automated Computational Method for Quantification of Total Fibrous Cap Volume and Mean Fibrous Cap Thickness with Optical Coherence Tomography Journal of the American College of Cardiology 15 66 B143-B144 2015
141. Oguz, Ipek; Zhang, Li; Lee, Kyungmoo; Abramoff, Michael David; Sonka, Milan; 4D longitudinal choroidal thickness quantification improves reproducibility Investigative Ophthalmology & Visual Science 56 7 5288-5288 2015
142. Almeida, David RP; Zhang, Li; Chin, Eric K; Mullins, Robert F; Kucukerciloglu, Murat; Sonka, Milan; Stone, Edwin M; Folk, James C; Abramoff, Michael David; Russell, Stephen R; Comparison of retinal and choriocapillaris thicknesses following sitting to supine transition in normal and age-related macular degeneration subjects Investigative Ophthalmology & Visual Science 56 7 5143-5143 2015
143. Kovarnik, Tomas; Chen, Zhi; Wahle, Andreas; Skalicka, Hana; Kral, Ales; Lee, Kyungmoo; Zhang, Ling; Meliska, Martin; Lopez, John; Sonka, Milan; IS RETINAL LAYER THICKNESS RELATED

TO CORONARY ATHEROSCLEROSIS? A STUDY WITH RETINAL OPTICAL COHERENCE TOMOGRAPHY AND CORONARY INTRAVASCULAR ULTRASOUND-VH *Journal of the American College of Cardiology* 67 13 359 2016

144. Chen, Zhi; Wahle, Andreas; Skalicka, Hana; Kral, Ales; Lopez, John; Kovarnik, Tomas; Sonka, Milan; EFFECT OF UPSTREAM AND DOWNSTREAM BIFURCATION PROXIMITY ON CORONARY PLAQUE CHANGES AFTER 1 YEAR USING COMPUTER AIDED INTRAVASCULAR ULTRASOUND ANALYSIS *Journal of the American College of Cardiology* 67 13 273 2016
145. Vimr, Ross; Kovarnik, Tomas; Chen, Zhi; Downe, Richard; Wahle, Andreas; Sonka, Milan; Lopez, John; Geographic Analysis of Coronary Atherosclerosis in a Serial Intravascular Ultrasound Radiofrequency Study: Is the Hot Spot Hypothesis Related to Phenotypic Differences or a Function of Plaque Burden? *Catheterization and Cardiovascular Interventions* 87 S72 2016
146. Lee, Kyungmoo; Buitendijk, Gabrielle HS; Bogunovic, Hrvoje; Springelkamp, Henriët; Hofman, Albert; Wahle, Andreas; Sonka, Milan; Vingerling, Johannes R; Klaver, Caroline CW; Abramoff, Michael D; Automated segmentability index for layer segmentation of macular SD-OCT images *Translational vision science & technology* 5 2 14-14 2016
147. Zhang, Li; Sohn, Elliott H; Mullins, Robert F; Sonka, Milan; Abramoff, Michael David; Automated quantification of choriocapillaris thickness near drusen *Investigative Ophthalmology & Visual Science* 56 7 5141-5141 2015
148. Klein, Barbara EK; Johnson, Chris A; Meuer, Stacy M; Lee, Kyungmoo; Wahle, Andreas; Lee, Kristine E; Kulkarni, Amruta; Sonka, Milan; Abramoff, Michael David; Klein, Ronald; Spectral domain optical coherence tomography (SD-OCT) and characteristics associated with glaucoma in community living older adults *Investigative Ophthalmology & Visual Science* 56 7 626-626 2015
149. Kovarnik, Tomas; Jerabek, Stepan; Chen, Zhi; Wahle, Andreas; Zhang, Ling; Kral, Ales; Horak, Jan; Sonka, Milan; Linhart, Ales; Non-invasive endothelial function assessment using digital reactive hyperemia correlates with 3D intravascular ultrasound and virtual histology derived plaque volume and plaque phenotype *JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY* 68 18 B246-B247 2016
150. Kovarnik, Tomas; Jerabek, Stepan; Chen, Zhi; Wahle, Andreas; Zhang, Ling; Yadegari, Andrew; Kral, Ales; Horak, Jan; Sonka, Milan; Linhart, Ales; TCT-604 Non-invasive endothelial function assessment using digital reactive hyperemia correlates with 3D intravascular ultrasound and virtual histology derived plaque volume and plaque phenotype *Journal of the American College of Cardiology* 68 18 B245 2016
151. Kovarnik, Tomas; Chen, Zhi; Wahle, Andreas; Kral, Ales; Chval, Martin; Kopriva, Karel; Lopez, John; Sonka, Milan; Linhart, Ales; TCT-96 Progression of coronary atherosclerosis despite lipid-lowering therapy in diabetic patients compared to non-diabetic ones. Study with 3D intravascular ultrasound and virtual histology *Journal of the American College of Cardiology* 68 18 B39 2016
152. Kashyap, Satyananda; Oguz, Ipek; Zhang, Honghai; Sonka, Milan; Automated segmentation of knee MRI using hierarchical classifiers and just enough interaction based learning: Data from osteoarthritis initiative *International Conference on Medical Image Computing and Computer-Assisted Intervention* 344-351 2016
153. Zhang, Li; Abramoff, Michael David; Bogunovic, Hrvoje; Waldstein, Sebastian M; Gerendas, Bianca; Schmidt-Erfurth, Ursula; Sonka, Milan; Automated Segmentation of Pigment Epithelial Detachment from SD-OCT *Investigative Ophthalmology & Visual Science* 57 12 5952-5952 2016

154. Sonka, Milan; Zhang, Li; Abramoff, Michael David; Refinement of Choroid/Sclera Interface using Just-Enough-Interaction Investigative Ophthalmology & Visual Science 57 12 5953-5953 2016
155. Lee, Kyungmoo; Bogunovic, Hrvoje; Kwon, Young H; Garvin, Mona K; Wahle, Andreas; Sonka, Milan; Abramoff, Michael David; Automated Identification of Retinal Nerve Fiber Bundle Connectivity in 9-field SD-OCT Investigative Ophthalmology & Visual Science 57 12 5941-5941 2016
156. Oguz, Ipek; Zhang, Li; Wahle, Andreas; Sonka, Milan; Abramoff, Michael David; Graph-based fluid segmentation from OCT images Investigative Ophthalmology & Visual Science 57 12 1636-1636 2016
157. Miri, Mohammad Saleh; Abramoff, Michael David; Kwon, Young H; Sonka, Milan; Garvin, Mona K; Automated 3D Segmentation of Bruch's Membrane Opening from SD-OCT Volumes Investigative Ophthalmology & Visual Science 57 12 5940-5940 2016
158. Klimscha, Sophie; Bogunovic, Hrvoje; Schlegl, Thomas; Philip, Ana-Maria; Zhang, Li; Abramoff, Michael David; Sonka, Milan; Gerendas, Bianca; Waldstein, Sebastian M; Schmidt-Erfurth, Ursula; Computational analysis of spatial correspondence between intraretinal, subretinal and sub-RPE fluid in neovascular AMD Investigative Ophthalmology & Visual Science 57 12 2016
159. M Pazdernik, H Bedanova, J Kautzner, V Melenovsky, V Karmazin, A Tomasek, T Kovarnik, I Malek, A Wahle, Z Chen, M Sonka: Insights to pathophysiology and risk factors of cardiac allograft vasculopathy: A prospective study using highly automated coronary optical coherence tomography segmentation software in 3D, European Heart Journal 38 (suppl 1), 2017
160. Young H Kwon, Kyungmoo Lee, Kai Wang, Chris A Johnson, Mona K Garvin, Milan Sonka, Michael David Abramoff: Optical Coherence Tomography analysis based prediction of Humphrey 24-2 visual field thresholds in patients with glaucoma, Investigative Ophthalmology & Visual Science 58 (8), 5828-5828, 2017
161. K Lee, IC Han, DB Critser, A Wahle, M Sonka, MD Abramoff: Layer-Specific Vascular Analysis of OCT Angiography in Diabetic Macular Edema, Investigative Ophthalmology & Visual Science 58 (8), 644-644, 2017
162. S Kashyap, A Wahle, H Zhang, M Sonka: Automated Prediction of Cartilage Thickness Changes in OAI MR Dataset, Osteoarthritis and Cartilage 25, S225-S226, 2017
163. S Kashyap, H Zhang, M Sonka: Just Enough Interaction for Fast Minimally Interactive Correction of 4D Segmentation of Knee MRI, Osteoarthritis and Cartilage 25, S224-S225, 2017
164. S Kashyap, H Zhang, M Sonka: Accurate Fully Automated 4D Segmentation of Osteoarthritic Knee MRI, Osteoarthritis and Cartilage 25, S227-S228, 2017
165. M Pazdernik, T Kovarnik, M Sonka, A Wahle, Z Chen, V Karmazin, J Kautzner, A Tomasek, V Melenovsky, H Bedanova: Should We Pharmacologically Modulate Renin-Aldosterone-Angiotensin System (RAAS) to Attenuate Cardiac Allograft Vasculopathy? A Prospective Study Using Highly Automated Coronary Optical Coherence Tomography Segmentation Software in 3D, The Journal of Heart and Lung Transplantation 36 (4), S292, 2017
166. Z Chen, A Wahle, Z Guo, H Zhang, V Karmazin, A Tomasek, H Bedanova, JJ Lopez, T Kovarnik, M Pazdernik, M Sonka: Highly Automated Analysis of Intimal and Medial Thickness in Heart- Transplant Coronary OCT Facilitates Longitudinal Studies of CAV Progression, The Journal of Heart and Lung Transplantation 36 (4), S155, 2017

167. M Pazdernik, T Kovarnik, Z Chen, A Wahle, V Karmazin, V Melenovsky, J Kautzner, A Tomasek, H Bedanova, M Sonka: Increased Heart Rate After Heart Transplant Is Not Associated with Early Progression of Cardiac Allograft Vasculopathy (CAV)-A Prospective Study Using Highly Automatic Coronary Optical Coherence Tomography Segmentation Software in 3D, *The Journal of Heart and Lung Transplantation* 36 (4), S297-S298, 2017
168. Kovarnik, T., Chen, Z., Mintz, G. S., Wahle, A., Bayerova, K., Kral, A., Chval, M., Kopriva, K., Lopez, J., Sonka, M., others (2017). Plaque volume and plaque risk profile in diabetic vs. non- diabetic patients undergoing lipid-lowering therapy: a study based on 3D intravascular ultrasound and virtual histology (1st ed., vol. 16, pp. 156). *Cardiovascular diabetology*.
169. Pazdernik, M., Chen, Z., Bedanova, H., Kautzner, J., Melenovsky, V., Karmazin, V., Malek, I., Tomasek, A., Ozabalova, E., Krejci, J., others (2018). Detecting Early Cardiac Allograft Vasculopathy Using Highly Automated 3D Coronary Optical Coherence Tomography Segmentation Analysis (4th ed., vol. 37, pp. S105–S106). *The Journal of Heart and Lung Transplantation*.
170. Sonka, M., Lee, K., Guo, Z., Zhang, H., Wahle, A., Waldstein, S. M., Gerendas, B. S., Schmidt- Erfurth, U., Abramoff, M. D. (2018). Multi-layer OCT segmentation in the presence of layer- disrupting pathology: Just-Enough Interaction Approach (9th ed., vol. 59, pp. 1677–1677). *Investigative Ophthalmology & Visual Science*.
171. Kassis, Nicholas; Kovarnik, Tomas; Weber, Joseph; Martin, Brendan; Chen, Zhi; Wahle, Andreas; Sonka, Milan; Lopez, John J; Optical Coherence Tomography-Based Predictors of Coronary Plaque Progression Using Validated, Automated Computational Methodology *Journal of the American College of Cardiology*,73,9,Supplement 1, 1304, *Journal of the American College of Cardiology*, 2019
172. Pazdernik, Michal; Wichterle, Dan; Chen, Zhi; Bedanova, Helena; Kautzner, Josef; Melenovsky, Vojtech; Karmazin, Vladimir; Malek, Ivan; Stiavnicky, Peter; Tomasek, Ales; Heart rate and early progression of cardiac allograft vasculopathy: A prospective study using highly automated 3D optical coherence tomography analysis. *Clinical Transplantation*, e13773, 2019
173. Lee, Kyungmoo; Zhang, Honghai; Guo, Zhihui; Wahle, Andreas; Bogunovic, Hrvoje; Waldstein, Sebastian M; Gerendas, Bianca S; Schmidt-Erfurth, Ursula; Abramoff, Michael David; Sonka, Milan; Fast and memory-efficient Just-Enough Interaction for retinal layer segmentation in OCT in layer-disrupting pathology, *Investigative Ophthalmology & Visual Science*, 60, 9, 155-155, 2019, *The Association for Research in Vision and Ophthalmology*
174. Mullan, S; Chen, Z; Pazdernik, M; Zhang, H; Wahle, A; Melenovsky, V; Kautzner, J; Karmazin, V; Bedanova, H; Tomasek, A; Deep Learning Facilitates Automation of Wall Layer Quantification in Heart Transplant Coronary OCT *The Journal of Heart and Lung Transplantation*, 38, 4, S281, 2019, Elsevier
175. Chen, Z; Pazdernik, M; Wahle, A; Zhang, H; Melenovsky, V; Kautzner, J; Karmazin, V; Bedanova, H; Tomasek, A; Ozabalova, E; Novel Descriptors of Coronary Wall Properties Measured by OCT at Baseline Are Associated with CAV-Related Intimal Thickening One Year after Heart Transplant, *The Journal of Heart and Lung Transplantation*, 38, 4, S98, 2019, Elsevier
176. Pazdernik, M; Wichterle, D; Chen, Z; Zhang, H; Wahle, A; Kautzner, J; Melenovsky, V; Malek, I; Karmazin, V; Bedanova, H; Effect of Heart Rate on Early Progression of Cardiac Allograft Vasculopathy: A Prospective Study Using Highly Automated 3-D Optical Coherence Tomography Analysis, *The Journal of Heart and Lung Transplantation*, 38, 4, S283, 2019, Elsevier
177. Liu, W., Chen, Z., Zhang, H., Wang, D., Plichta, K., Smith, M., Sonka, M., Buatti, J. (2020). A Just Enough Interaction Segmentation Tool Improves Consistency and Efficiency for Radiotherapy

Contouring of Meningiomas. *International Journal of Radiation Oncology, Biology, Physics*, 108(3), e290–e291.

178. Samaniego, E., Roa, J., Zhang, H., Kosciak, T., Ortega-Gutierrez, S., Bathla, G., Sonka, M., Derdeyn, C., Magnotta, V., Hasan, D. (2020). O-021 Increased contrast enhancement of the parent vessel of unruptured intracranial aneurysms in 7T MR imaging. *Journal of NeuroInterventional Surgery*, 12(Suppl 1), A14–A15.
179. Gutmann, Laurie; Sonka, Milan; Thedens, Daniel; Zuccarino, Riccardo; Guo, Zhihui; Shy, Michael; Nopoulos, Peggy; Volumetric quantification of calf muscle shape and morphology from 3D MR images: Fully automated deep LOGISMOS approach *JOURNAL OF THE PERIPHERAL NERVOUS SYSTEM*, 25, 4, 2020
180. Pazdernik, Michal; Wichterle, Dan; Chen, Zhi; Bedanova, Helena; Kautzner, Josef; Melenovsky, Vojtech; Karmazin, Vladimir; Malek, Ivan; Stiavnicky, Peter; Tomasek, Ales; Heart rate and early progression of cardiac allograft vasculopathy: A prospective study using highly automated 3-D optical coherence tomography analysis *Clinical transplantation* 34 2 e13773 2020
181. Pazdernik, M; Hubacek, J; Wohlfahrt, P; Kautzner, J; Melenovsky, V; Stiavnicky, P; Carna, Z; Karmazin, V; Kovarnik, T; Bedanova, H; Role of Genetics in Development of Cardiac Allograft Vasculopathy *The Journal of Heart and Lung Transplantation* 39 4 S76 2020 Elsevier
182. Chen, Z; Mullen, S; Pazdernik, M; Melenovsky, V; Kautzner, J; Karmazin, V; Bedanova, H; Tomasek, A; Ozabalova, E; Zhang, H; Assessment of cardiac allograft vasculopathy from Oct images: automated analysis is as good as expert-guided approach *The Journal of Heart and Lung Transplantation* 39 4 S77 2020 Elsevier
183. Lee, Kyungmoo; Warren, Alexis K; Abramoff, Michael; Wahle, Andreas; Whitmore, S Scott; Scheetz, Todd E; Mullins, Robert F; Fingert, John H; Sonka, Milan; Sohn, Elliott H; Repeatability and reproducibility of automated choroidal layer segmentations from SD-OCT and EDI-OCT scans *Investigative Ophthalmology & Visual Science* 61 7 479-479 2020 The Association for Research in Vision and Ophthalmology
184. Lee, Kyungmoo; Warren, Alexis K; Abramoff, Michael D; Wahle, Andreas; Whitmore, S Scott; Han, Ian C; Fingert, John H; Scheetz, Todd E; Mullins, Robert F; Sonka, Milan; Automated segmentation of choroidal layers from 3-dimensional macular optical coherence tomography scans *Journal of neuroscience methods* 360 109267 2021 Elsevier
185. Le, Nam H; Samaniego, Edgar A; Raghuram, Ashrita; Sanchez, Sebastian; Zhang, Honghai; Sonka, Milan; Semi-automated intracranial aneurysm segmentation and neck detection, *Medical Imaging 2022: Image Processing*, 12032, 850-855, 2022, SPIE
186. Mullan, Sean; Sonka, Milan; Visual attribution for deep learning segmentation in medical imaging, *Medical Imaging 2022: Image Processing*, 12032, 245-254, 2022, SPIE
187. Chen, Zhi; Zhang, Honghai; Wahle, Andreas; Woo, Vincent; Kassis, Nicholas; Kovarnik, Tomas; Sonka, Milan; Lopez, John J; Deep Learning Based Automated Optical Coherence Tomography Analysis: A Novel Tool for Identification Of Coronary Artery Lipid Plaques And Quantification Of Fibrous Cap Thickness, *Journal of the American College of Cardiology*, 81, 8 Supplement, 826-826, 2023, American College of Cardiology Foundation Washington DC
188. Wang, Jui-Kai; Chen, Zhi; Zhang, Honghai; Choi, Yun Jae; Johnson, Brett A; Kupersmith, Mark J; Sonka, Milan; Garvin, Mona K; Kardon, Randy H; A Hybrid Deep Learning and Optimal 3D Graph Search Approach Improves Retinal Layer Segmentation in Very Thin Retina, *Investigative Ophthalmology & Visual Science*, 64, 8, 5448-5448, 2023.

#### **1.4 Articles published in popular journals or journals with moderate review procedures or presented at a meeting and for which the society or organization does not provide a permanent printed version of article.**

1. Sonka, M.: Recognition Methods in Meteorology – Metody rozpoznávání v meteorologii. Slaboproudý obzor, r. 42, č. 12, 1981 (in Czech).
2. Sonka, M.: Introduction to Texture Recognition – Úvod do rozpoznávání texturních obrazů. Acta Polytechnica, č. III-5, 1983 (in Czech).
3. Sonka, M.: Statistical Texture Recognition – Příznakové metody popisu textur. Acta Polytechnica, č. III-9, 1983 (in Czech).
4. Sonka, M.: Syntactic Texture Recognition – Syntaktické a hybridní metody popisu textur. Acta Polytechnica, č. III-18, 1983 (in Czech).
5. Mařík, R., Sonka, M., Hlaváč, V.: Image Preprocessing - Filtering – Metody předzpracování obrazů - filtrace. Acta Polytechnica, č. 1, 1985 (in Czech).
6. Mařík, R., Sonka, M., Hlaváč, V.: Image Preprocessing - Smoothing – Metody předzpracování obrazů - ostření, Acta Polytechnica, č. 5, 1985 (in Czech).
7. Mařík, R., Sonka, M., Hlaváč, V.: Image Preprocessing - Segmentation – Metody předzpracování obrazů - segmentace, Acta Polytechnica, č. 9, 1985 (in Czech).
8. Sonka, M.: Knowledge & Context in Machine Vision: Toward Real Applications. In Falcon 92, IEEE Cedar Rapids Section, 1992, p. 24.
9. Sonka, M., Zhang, X., Collins, S. M.: Reliable extraction of primary arterial trees from coronary angiograms, Quantitative Coronary Imaging 1995, Rotterdam, June 1995.