

Unchallenged Claim 1 of U.S. Patent No. 9,661,226	Unchallenged Claim 1 of U.S. Patent No. 10,009,537	Challenged Claim 1 of U.S. Patent No. 11,252,325
<p>A method for real-time estimating of an image quality, for use with a device that comprises in a single enclosure a digital camera module or functionality that comprises</p> <p>an optical lens for focusing received light from a scene and an image sensor coupled to the optical lens for capturing an image of the scene;</p> <p>a motion or location sensor for sensing the device motion; and</p> <p>a processor coupled to the image sensor and to the digital camera for receiving data therefrom,</p> <p>the method by the processor comprising:</p>	<p>A method for estimating quality of a digital image frame having pixels, where the image is taken from a video stream comprising multiple images, each image frame comprises an image of a scene; where the video stream was taken by a digital camera;</p>	<p>A method for estimating quality of at least one image from a stream of images, for use with a device that comprises in a single enclosure a digital camera module or functionality that comprises at least one optical lens for focusing received light from a scene and an image sensor coupled to at least one optical lens for capturing an image of the scene; a motion or location sensor for sensing the device motion; and a processor coupled to the image sensor and to the digital camera for receiving data therefrom, the method by the processor comprising use of at least one value and weight;</p>
<p>obtaining a first value (QI1) responsive to the device motion from the motion or location sensor;</p>	<p>obtaining a first value (QI1) associated with the digital camera at the time of said image capture;</p>	<p>obtaining a first value (QI1) responsive to the device motion from at least one motion or location sensor;</p>
<p>estimating a first weight (c1) associated with the first value;</p>	<p>estimating a first weight (c1) associated with the first value;</p>	<p>estimating a first weight (c1) associated with the first value;</p>
	<p>analyzing the captured image for detecting or recognizing one or more objects in, or one or more characteristics of, the image;</p>	
<p>obtaining a second value (QI2) associated with the digital camera;</p>	<p>obtaining a second value (QI2) associated with the analysis;</p>	<p>obtaining a second value (QI2), where the second value is a measurement of under or over exposure of at least one of a part of image or face exposure;</p>
<p>estimating a second weight (c2) associated with the second value;</p>	<p>estimating a second weight (c2) associated with the second value;</p>	<p>estimating a second weight (c2) associated with the second value;</p>
<p>analyzing the captured image for detecting</p>		<p>analyzing the captured image for detecting</p>

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or recognizing one or more objects in, or one or more characteristics of, the image;		or recognizing zero or more faces in a picture, calculating properties of at least one of said faces if exist, where said properties are at least one of:
obtaining a third value (QI3) associated with the analysis;		looking at camera, smiling, crying, face detection quality, face exposure or subject movement to obtain a third value (QI3);
estimating a third weight (c3) associated with the third value;		estimating a third weight (c3) associated with the third value;
		obtaining a fourth value (QI4) responsive to obstruction of at least one optical lens; and
		estimating a fourth weight (c4) associated with the fourth value;
calculating a total value according to, or based on, the first value (QI1) weighted according to first weight (c1), the second value (QI2) weighted according to second weight (c2), and the third value (QI3) weighted according to third weight (c3);	calculating a total value according to, or based on, the first value (QI1) weighted according to the first weight (c1), the second value (QI2) weighted according to the second weight (c2);	wherein at least one of the values QI1, QI2, QI3, QI4 or the weights c1, c2, c3, c4 are calculated based on an artificial neural network employing deep learning algorithm
comparing the total value to a threshold;	comparing the total value to a threshold;	to select, based on values QI1, QI2, QI3, QI4 and weights c1, c2, c3, c4, at least one appropriate suggestion from a pre-stored table of suggestions of how a user of the system may cause at least on said value to be above or below a threshold and to present said appropriate suggestion to the user.
determining whether the total value is higher than, or below than, the threshold; and	determining whether the total value is higher than, or lower than, the threshold; and	
acting in response to the determining.	acting in response to the determination;	
	Where the second weight (c2) is partially based respective values of previous images in said video.	