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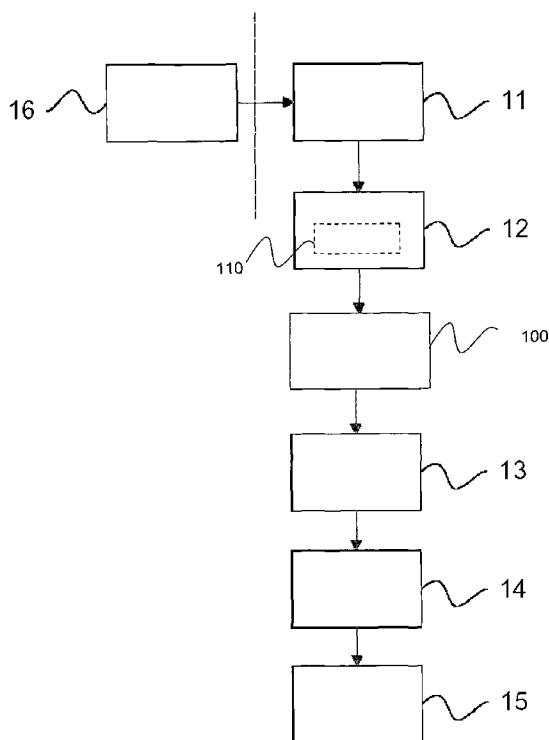
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(54) Title: A METHOD, AN APPARATUS AND A COMPUTER-READABLE MEDIUM FOR PROCESSING A NIGHT VI-
SION IMAGE DATASET



(57) Abstract: A method is disclosed for enhancing the quality of an image dataset, such as, e.g., reducing the noise in a noisy image data set and increasing the contrast in the image data set. The method may be used for processing a sequence of image datasets, e.g. night vision image datasets, wherein said sequence comprises at least two image datasets each having at least two pixels, and wherein each pixel has an intensity value. The method comprises calculating a structure tensor for each pixel in an image dataset comprised in the sequence of image datasets; calculating values in a summation kernel based on said structure tensor for each pixel in said image dataset; calculating a weighted intensity value for each pixel in said first image dataset, using as weights the values in said summation kernel; storing said weighted intensity value for each pixel in said image dataset as a processed intensity value for each corresponding pixel in a processed output image dataset; rotating a local coordinate system in which the summation kernel is described resulting in that the coordinate axes of said local coordinate system coincide with the directions of the eigenvectors of said structure tensor, where said eigenvectors are described in the global coordinate system of the image dataset, and scaling the coordinate axes of the local coordinate system in which the summation kernel is described by an amount related to the eigenvalues of the structure tensor via a width function $W(\lambda_i) = \sigma_i$, and wherein said eigenvalues depend on the amount of intensity variation in the direction of their corresponding eigenvectors, the width function being a decreasing function such that $w(0) = \sigma_{\max}$ and $\lim_{a \rightarrow \infty} w = \sigma_{\min}$. An apparatus and a computer readable medium are also provided.



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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	YANG G Z ET AL: "STRUCTURE ADAPTIVE ANISOTROPIC IMAGE FILTERING" IMAGE AND VISION COMPUTING, GUILDFORD, GB, vol. 14, no. 2, March 1996 (1996-03), pages 135-145, XP001058181 ISSN: 0262-8856	1-3, 7-16,18, 21-26, 33,41-44
Y	the whole document	4-6,17, 19,20, 27-32, 34-40
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X	UTTENWEILER D ET AL: "Spatiotemporal anisotropic diffusion filtering to improve signal-to-noise ratios and object restoration in fluorescence microscopic image sequences" JOURNAL OF BIOMEDICAL OPTICS SPIE USA, vol. 8, no. 1, January 2003 (2003-01), pages 40-47, XP002413988 ISSN: 1083-3668	1-3, 7-16,18, 21-26,33
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Y	----- "Laplacian/Laplacian of Gaussian" INTERNET CITATION, [Online] 2003, XP007904097 Retrieved from the Internet: URL:http://homepages.inf.ed.ac.uk/rbf/HIPR2/log.htm> [retrieved on 2008-02-19] page 2	19,20, 27-32, 38-40
A	----- SCHARR H ET AL: "Accurate optical flow in noisy image sequences using flow adapted anisotropic diffusion" SIGNAL PROCESSING. IMAGE COMMUNICATION, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, vol. 20, no. 6, July 2005 (2005-07), pages 537-553, XP004924112 ISSN: 0923-5965 the whole document	
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A	GREENBERG ET AL: "Improved structure-adaptive anisotropic filter" PATTERN RECOGNITION LETTERS, NORTH-HOLLAND PUBL. AMSTERDAM, NL, vol. 27, no. 1, 1 January 2006 (2006-01-01), pages 59-65, XP005159001 ISSN: 0167-8655 the whole document -----	