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Date: Sun, 30 Apr 1995 21:24:42 GMT
Message-Id: <199504302124.VAA10624@ind201b.wi.leidenuniv.nl>
To: sion@fwi.uva.nl
Subject: SION Project Proposal
Cc: huijsman@WI.LeidenUniv.NL, mlew
Status: RO

Dear R. J. Kellermann Deibel,

We would like to submit this proposal to SION

Michael S. Lew and D. (Nies) P. Huijsmans

A.1 Title: Digital Video Analysis

A.2 Applicants:

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4. Abstract:

As digital libraries and film databases grow, we will need methods to assist us in the synthesis and analysis of digital video. Two problems will be addressed: (1) Video analysis, which includes segmentation, classification, and recognition, and (2) Computational efficiency through integration with video compression methods. Regarding the video analysis, a method based on 2D pixel motion flow fields and the Karhunen-Loeve transform is proposed to determine the location of scene cuts and the type of camera movement within the scene. The 2D pixel motion can be found from methods which include optical flow and correlation. The scene cuts can be detected by analyzing the displaced frame difference or the smoothness of the pixel motion field. The Karhunen-Loeve transform was chosen because it extracts optimal linear features which describe the pixel motion