Manuscript ID : 00000-73085

Source ID : 00000176

Global Research and Development Journal for Engineering

Volume 1, Issue 10, September 2016, Pages 79-88, Page Count - 10

FOREGROUND-BACKGROUND SEPARATION FROM VIDEO CLIPS USING RMAMR METHOD ALONG WITH GROUND TRUTH EXTRACTION

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Abstract

Foreground-Background Separation from video clips using RMAMR method along with ground truth extraction plays a great role in video surveillance systems. The method proves to be a fully and important technique, making recognition, classification, and scene analysis more efficient. Initially ground truth images are extracted for the given video. A motion-assisted matrix restoration (MAMR) model for foreground background separation in video clips is proposed. In the proposed MAMR model, the backgrounds across frames are modeled by a low-rank matrix, while the foreground objects are modeled by a sparse matrix. To facilitate efficient foreground background separation, a dense motion field is estimated for each frame, and mapped into a weighting matrix which indicates the likelihood that each pixel belongs to the background. Anchor frames are selected in the dense motion estimation to overcome the difficulty of detecting slowly moving objects and camouflages. A robust MAMR model (RMAMR) is proposed against noise for practical applications. Experiment shows that the proposed methodology affirms a good performance in separation of foreground and background from video clips.

Author Keywords

Background subtraction, Foreground Detection, ADM, Motion Detection, Ground truth extraction

ISSN Print:
Source Type: Journals
Publication Language: English
Abbreviated Journal Title: GRDJE
Publisher Name: GRD Journals
Major Subject: Physical Sciences
Subject area: Computer Graphics and Computer-Aided Design

ISSN Online: 2455-5703
Document Type: Journal Article
DOI:
Access Type: Open Access
Resource Licence: CC BY-NC
Subject Area classification: Computer Science
Source: SCOPEDATABASE

Reference