FINAL YEAR PROJECT 2012

ABSTRACT ON

RECOGNITION OF HUMAN ACTION UNDER VIEW CHANGE

SUBMITTED BY

MA.P.MAANICCKASENTIL 20084036

G.MOHAMED SHAMSUDEEN 20084038

N.MURUGAPPAN 20084268

**VIEW INDEPENDENT ACTION RECOGNITION FROM TEMPORAL SELF-SIMILARITIES**

**INTRODUCTION**

In this paper we present the recognition of human actions under view changes. Here we deploy an automotive visual surveillance system to detect abnormal behavior patterns and recognize the normal ones.

**ABSTRACT**

If a person enters a room, video of him is captured and stored then it is given to the training module here the video is checked if it is a normal behavior splited image is taken, whenever the action is recognized blob images are saved, and the frame counts are taken . In case, the anomaly is detected the red color will be displayed. The abnormal behavior is achieved by keep tracking the videos and blob frames and checking each frame values.

We explore self-similarities of action sequences over time and observe the striking stability of such measures across views. Building upon this key observation, we develop an action descriptor that captures the structure of temporal similarities and dissimilarities within an action sequence.

Despite this temporal self-similarity descriptor not being strictly view-invariant, we provide intuition and experimental validation demonstrating its high stability under view changes. Self-similarity descriptors are also shown to be stable under performance variations within a class of actions when individual speed fluctuations are ignored. If required, such fluctuations between two different instances of the same action class can be explicitly recovered with dynamic time warping, as will be demonstrated, to achieve cross-view action synchronization.

More central to the current work, temporal ordering of local self-similarity descriptors can simply be ignored within a bag-of-features type of approach. Sufficient action discrimination is still retained in this way to build a view-independent action recognition system. Interestingly, self-similarities computed from different image features possess similar properties and can be used in a complementary fashion. Our method is simple and requires neither structure recovery nor multi-view correspondence estimation. Instead, it relies on weak geometric properties and combines them with machine learning for efficient cross-view action recognition. The method is validated on three public data sets. It has similar or superior performance compared to related methods and it performs well even in extreme conditions, such as when recognizing actions from top views while using side views only for training.

**SOFTWARE REQUIRMENTS**

\* Domain: Transactions on Pattern Analysis and Machine intelligence

\* Operating system : Windows XP

\* Platform : JAVA

\* Protocol : TCP

\* Special Tool : Java Media Framework

\* Database : MySQL 4.0

**IEEE REFERENCE DETAILS:**

This paper appeared in: [Pattern Analysis and Machine Intelligence, IEEE Transactions on](http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=34)   
Issue Date: Jan. 2011

Volume: 33 [Issue:1](http://ieeexplore.ieee.org/xpl/tocresult.jsp?isnumber=5639101)

On page(s): 172 - 185

ISSN: 0162-8828

INSPEC Accession Number: 11661266

Digital Object Identifier: [10.1109/TPAMI.2010.68](http://dx.doi.org/10.1109/TPAMI.2010.68)

Date of Publication: 18 March 2010

Date of Current Version: 18 November 2010

PubMed ID: [21088326](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=PubMed&Cmd=ShowDetailView&TermToSearch=21088326&ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum)

Sponsored by: [IEEE Computer Society](http://www.computer.org/)