National Research University Higher School of Economics
Faculty of Business Informatics
School of Software Engineering
Software Management Department

BASED ON LUCAS-KANADE ALGORITHM OBJECT DYNAMIC IDENTIFICATION APPLICATION

Student:	Kostenko Dmitry
Group:	472SE
Argument Consultant:	Prof. Ivan. M. Gostev, PhD
Style and Language Consultant:	Tatiana A. Stepantsova

Moscow
2013

Abstract

Computer vision is a dynamic scientific discipline. One of the most important objectives of the computer vision is real-time object tracking. A basis of the developed algorithm is the differential local method of Lucas and Kanade [1]. This method allows to keep track of point features in the frame sequence. The aim of this degree work is to develop a program that implements this functionality: able to read a video-stream from a laptop's built-in camera, in the presence of a human hand on the frame, program will display the number of unbent fingers. In this paper we presents a novel approach of hand identification and tracking by using a differential method for optical flow calculation developed by B. D. Lucas and T. Kanade [1]. The proposed method consists of three steps which can be in real-time. Firstly, in each frame we calculate contours and then point features using Harris corner detector [2]

Contents

Introduction

1-2 pages adssdadas

Main body

5 pages

Conclusion

1 pages

Bibliography

[1] Takeo Kanade Bruce D. Lucas. *An Iterative Image Registration Technique with an Application to Stereo Vision*. Computer Science Department Carnegie-Mellon University, Pittsburgh, Pennsylvania 15213, 1981.

[2] Chris Harris. *A COMBINED CORNER AND EDGE DETECTOR*, 1988.