Ph.D. Defense

Action Recognition using Spatio-Temporal Volumes, Scene Context, Feature Tree and Particle Evolution

July 2, 2012 · 3:30pm · HEC 101

Research in human action recognition has advanced along multiple fronts in recent years to address various types of actions including simple, isolated actions in staged data (e.g., KTH dataset), complex actions (e.g., UCF50) and naturally occurring actions in surveillance videos (e.g, VIRAT dataset). The approach taken to solve action recognition problem primarily depends on the kind of dataset and if the object of interest can be detected and tracked. In this talk, I will present three new approaches to do action recognition in different scenarios. Firstly, I will present the use of 3D-Gradients in Spatio-temporal volumes obtained from tracking an object. Secondly, I will show the advantages of using scene context information where background and foreground can be separated. Thirdly, I will present Feature-Tree frame work, which doesn't need any detection, tracking or background separation. Finally, I will introduce a new video representation "Particle Flow" and experimentally show that it outperformed video representations like gradients and optical flow.

Computer VISION @ Lab
University of Central Florida

Mr. Kishore Reddy

Biography

Kishore Kumar Reddy is an Electrical Engineering Ph.D. candidate at University of Central Florida. He works in Computer Vision Lab at UCF under the supervision of Dr. Mubarak Shah. He received his MS. from Fachhochschule Südwestfalen, Germany and B.Tech from JNTU, India. His primary research is focused on Action/Activity/Gesture recognition in videos taken from YouTube (Consumer Videos), aerial platforms (Aircraft), rooftop surveillance cameras, and Kinect Sensor with depth information. He also works in the field of medical imaging focusing on automatic brain tumor detection and segmentation in MRI images.