

KISHORE KUMAR REDDY

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RESEARCH INTERESTS

Action/Activity recognition
Video surveillance from rooftop and aerial cameras

Video classification in YouTube videos
Detection and segmentation of brain tumor (MRI)

EDUCATION

University of Central Florida Orlando, USA
Doctor of Philosophy in Electrical Engineering 2006 – 2012
Research Area: Computer Vision
Dissertation: Action Recognition using Particle Flow Fields
Research Advisor: Dr. Mubarak Shah, Agere Chair Professor, University of Central Florida

Fachhochschule Südwestfalen (Dual Degree: Bolton University, UK) Soest, Germany
Master of Science in Electronic Systems and Engineering Management 2003 – 2007
Master Thesis: Study and Doc of JPEG2000 Tech and Software for Codesigning

Jawaharlal Nehru Technological University SVNE, India
Bachelor of Technology in Electronics and Communication Engineering 1998 – 2002
Project: Microcontroller Based PCM Frame Synchronizer

WORK EXPERIENCE

University of Central Florida Orlando, FL
Research Assistant, Computer Vision Lab Aug 2008 – present
Research Assistant, Control Systems Lab Aug 2006 – Aug 2008
Teaching Assistant, Department of Electrical Engineering and Computer Science Jan 2007 – Dec 2008

Kitware Inc. Clifton Park, NY
Summer Intern, Computer Vision Group May 2011 – Aug 2011

Clarkson University Potsdam, NY
Research Assistant, Control Systems Lab Jan 2006 – Aug 2006
Teaching Assistant, Department of Electrical Engineering and Computer Science Jan 2006 – Apr 2006

Haute école valaisanne Sion, Switzerland
Internship, Worked on JPEG2000 technology Jul 2005 – Jan 2006

Fachhochschule Südwestfalen Soest, Germany
Research Assistant (Volunteer), Signal processing for predictive maintenance Aug 2003 – Jul 2005

Indian Space Research Organization Sriharikota, India
Internship, Developed microcontroller based PCM frame synchronizer Jan 2002 – Apr 2002

COMPUTER VISION PUBLICATIONS

"*Recognizing 50 Human Action Categories of Web Videos*", **Kishore K. Reddy** and Mubarak Shah, Machine Vision and Applications (**MVA**), September **2012**. (Journal).

"*Human Action Recognition in Large-Scale Datasets Using Histogram of Spatiotemporal Gradients*", **Kishore K. Reddy**, Naresh Cuntoor, Amitha Perera, Mubarak Shah and Anthony Hoogs, to appear in Advanced Video and Signal-Based Surveillance (**AVSS**), September **2012**. (Poster)

"*Confidence Guided Enhancing Brain Tumor Segmentation in Multi-Parametric MRI*", **Kishore K. Reddy**, Berkan Solmaz, Pingkun Yan, Nicholas G. Avgeropoulos, David J. Rippe and Mubarak Shah, International Symposium on Biomedical Imaging (**ISBI**), April **2012**. (Oral)

"*Macro-Class Selection for Hierarchical K-NN Classification of Inertial Sensor Data*", Corey McCall, **Kishore Reddy**, and Mubarak Shah, Second International Conference on Pervasive and Embedded Computing and Communication Systems (**PECCS**), February **2012**. (Oral)

"*A Large-scale Benchmark Dataset for Event Recognition in Surveillance Video*", Sangmin Oh, Anthony Hoogs, Amitha Perera, Naresh Cuntoor, Chia-Chih Chen, Jong Taek Lee, Saurajit Mukherjee, JK Aggarwal, Hyungtae Lee,

Larry Davis, Eran Swears, Xioyang Wang, Qiang Ji, **Kishore Reddy**, Mubarak Shah, et al., Computer Vision and Pattern Recognition (**CVPR**), June 2011. (Poster)

“*Incremental Action Recognition Using Feature-Tree*”, **Kishore Reddy**, Jingen Liu, and Mubarak Shah, Int'l Conference on Computer Vision (**ICCV**), September 2009. (Poster)

DEMOS AND OTHER SELECTED PUBLICATIONS

“*AVSS 2011 demo session: A large-scale benchmark dataset for event recognition in surveillance video*”, Sangmin Oh, Anthony Hoogs, Amitha Perera, Naresh Cuntoor, Chia-Chih Chen, Jong Taek Lee, Saurajit Mukherjee, JK Aggarwal, Hyungtae Lee, Larry Davis, Eran Swears, Xiaoyang Wang, Qiang Ji, **Kishore Reddy**, Mubarak Shah, et al., Advanced Video and Signal-Based Surveillance (**AVSS**), August 2011. (Demo)

“*KEYS: Real-time Action Recognition Using Feature-Tree*”, **Kishore Reddy**, Jonathan Poock, Jingen Liu, and Mubarak Shah, International Conference on Computer Vision (**ICCV**), September 2009. (Demo)

“*Multi-Input/Multi-Output Adaptive Output Feedback Control Design for Aeroelastic Vibration Suppression*”, **K.K. Reddy**, J. Chen, A. Behal, and P. Marzocca, AIAA Journal of Guidance, Control, and Dynamics, July-August 2007.

MAJOR PROJECTS

University of Central Florida, Computer Vision Lab

Orlando, FL

Particle Flow Fields for Action Recognition

Sep 2011 – Present

Developed a novel video representation “Particle Flow Fields” that outperforms optical flow and gradients in action recognition tasks

Video Image Retrieval and Analysis Tool, sponsored by DARPA

Aug 2008 – Feb 2012

Developed, implemented and tested action recognition algorithms on rooftop and aerial videos

Brain tumor detection and segmentation in MRI images, sponsored by NIH

May 2009 – Nov 2011

Developed a framework to use texture features and multiple modalities in MRI to improve the accuracy in different segmentation algorithms

Action Recognition on Large Scale Web Videos

Oct 2010 – May 2011

Developed a framework to do action recognition in large scale datasets like UCF50 and HMDB51 using novel scene context descriptor in conjunction to motion descriptor.

Action Recognition using Smartphone

Jan 2011 – May 2011

Conceived and helped solve the task of performing action recognition using data from accelerometers on smart phones (UCF-iPhone dataset)

UCF - Aerial Rooftop Ground Multi-view Action Dataset

Jun 2010 – May 2011

Led a team of 15 people to develop a unique action recognition dataset where actions are captured from ground, rooftop and aerial cameras simultaneously

UCF-50 Action Dataset

Jul 2010 – Oct 2010

Led a team of 10 people to develop one of the biggest action recognition datasets.

Image classification and segmentation

Jul 2009 – Oct 2009

Developed a framework to use feature-trees and modified Bag of Features approach for image classification and segmentation in PASCAL dataset.

KEYS: Real-time Action Recognition System

Mar 2009 – Sep 2009

Led a team of three people and designed a real-time action recognition system using feature-tree algorithm and demonstrated live at ICCV2009.

Incremental Action Recognition

Jan 2009 – Jun 2009

Developed an algorithm to perform multiple action recognition, incremental action recognition and action localization using feature-trees.

Kitware Inc., Clifton Park

Clifton Park, NY

Action Recognition in Aerial Videos

May 2011 – Aug 2011

Developed and analyzed 3D-STHOG to scale, frame rate and translation

ACTIVITIES AND OUTREACH

Reviewer: TPAMI, CVIU, TIP, TSMC, TNNLS, Neurocomputing and MVAP