Video Based Scene Understanding

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Overview

Computer vision is a field that includes methods for acquiring, processing, analyzing, and understanding images and, in general, high-dimensional data from the real world in order to produce numerical or symbolic information, e.g., in the forms of decisions. A theme in the development of this field has been to duplicate the abilities of human vision by electronically perceiving and understanding an image. This image understanding can be seen as the disentangling of symbolic information from image data using models constructed with the aid of geometry, physics, statistics, and learning theory. Computer vision has also been described as the enterprise of automating and integrating a wide range of processes and representations for vision perception.

As a scientific discipline, computer vision is concerned with the theory behind artificial systems that extract information from images. The image data can take many forms, such as video sequences, views from multiple cameras, or multi-dimensional data from a medical scanner. Video sequence only provides the opportunity to observe an object in more details but also shows the interaction of objects over time. As a technological discipline, scene understanding seeks to apply its theories and models to the construction of machine vision systems. Sub-domains of scene understanding include event detection, video tracking, object recognition, object pose estimation, learning, indexing, motion estimation, and image restoration.

Course participants will learn these topics through lectures and hands-on experiments. Also case studies and assignments will be shared to stimulate research motivation of participants.

Modules	**Video Based Scene Understanding : : December 7 - December 18, 2015** **Number of participants for the course will be limited to fifty.**
You Should Attend If…	▪ You are an electronics engineer or research scientist interested in in video and images understanding for various applications ▪ You are and information scientist/engineer interested to learn application of video and images in your profession. ▪ You are a student or faculty from academic institution interested in learning how to do research on video based scene understanding or want to work with video based understanding.
Fees	The participation fees for taking the course is as follows: **Participants from abroad : US $500** **Industry/ Research Organizations: ` 30000** **Academic Institutions: ` 15000** **TEQIP-II approved Institutions : ` 2000 (To be refunded after completion of course)** The above fee include all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges, 24 hr free internet facility. The participants will be provided with accommodation on payment basis.

The Faculty

Prof. Amit K. Roy Chowdhury is Professor of Electrical and Computer Engineering and Cooperating Faculty, Computer Science and Engg. of University of California, Riverside, California, USA. His research interests include computer vision/image processing, pattern recognition, Biometrics, especially face and soft biometrics, Vision sensor networks and statistical signal processing.

Dr. Sudipta Mukhopadhyay is faculty of Associate Professor, Electronics & Electrical Communication Engineering of IIT Kharagpur, India. His research interests include Medical Image and Signal Processing, Content based Medical Image Retrieval, Continuous Authentication and Video Processing.

Prof. Prabir Kumar Biswas is faculty of Professor and HOD of Electronics & Electrical Communication Engineering, IIT Kharagpur, India. His research interests include Image Processing, Computer Vision, Automated Visual Inspection, Multimedia Network, Pattern Recognition, Sensor Network.

Course Co-ordinator

Prof. Sudipta Mukhopadhyay
Phone: 03222-283569
E-mail: smukho@ece.iitkgp.ernet.in

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