

The Department of Mechanical Engineering
College of Engineering and Applied Sciences
Stony Brook University

Mechanical Engineering Seminar



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Friday, October 5, 2018 at 11:00 AM, Room 173 Light Engineering Building

Lecture: Toward understanding and predicting human behavior in video.

Abstract

Enabling computers to understand and predict human behavior in video has the potential to revolutionize many areas that benefit society such as healthcare, surveillance, and robotics. Critical to the understanding and prediction of human behavior is the ability to detect their body parts (e.g., head and hands), recognize their actions, analyze their facial emotions, predict their gaze attention, and anticipate their future movement. In the first part of this talk, I will describe the above mentioned problems and provide an overview of my current research projects.

In the second part of this talk, I will focus on one particular recent work. I will describe a method for early recognition of human actions, one that can take advantages of multiple cameras. To account for the limited communication bandwidth and processing power, we will learn a camera selection policy so that the system can attend to the most relevant information at each time step. This problem is formulated as a sequential decision process, and the attention policy is learned based on reinforcement learning. Experiments on several datasets demonstrate the effectiveness of this approach for early recognition of human actions.

Biography

Minh Hoai Nguyen is an Assistant Professor of Computer Science at Stony Brook University. He received a Bachelor of Software Engineering from the University of New South Wales in 2006 and a Ph.D. in Robotics from Carnegie Mellon University in 2012. His research interests are in computer vision and machine learning. He has published extensively in top-tier peer-reviewed conferences and journals, including CVPR, NIPS, PAMI and IJCV. In 2012, Nguyen and his coauthor received the Best Student Paper Award at the IEEE Conference on Computer Vision and Pattern Recognition (CVPR).

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