Learning Discriminative Representations for Visual Recognition

Dr. Zhuolin Jiang
Noah's Ark Lab

Abstract:

Many computer vision recognition algorithms focus on training the classifier or the regressor from large training sets. Feature extraction is critical for the final performance, however, most of current prevalent features are hand-crafted, such as SIFT, HOG and LBP etc. We have developed representation learning techniques that can automatically learn discriminative representations from visual data. In this talk, I will firstly present a novel sparse representation based feature learning approach called Label Consistent K-SVD. This approach and its online learning version have been successfully applied to object and action recognition. Then I will present a submodular learning framework for object recognition. Our framework can achieve state-of-the-art performances and speed up the representation learning process. Finally I will briefly introduce other research projects based on sparse representation learning and submodular optimization, and their applications to object, face and action recognition.

About the Speaker:

Dr. Zhuolin Jiang is a Researcher of Huawei Noah's Ark Laboratory. Before coming to Huawei, he was a Research Scientist in the Computer Vision Lab at the University of Maryland, College Park. He received the PhD degree in computer science from the South China University of Technology in 2010. He was a PhD exchange student at the University of Maryland from 2008 to 2010. His coauthored paper won the Best Student Paper Award at the Asian Conference on Computer Vision 2012. His research interest includes action detection and recognition in videos, object categorization, human motion tracking, discriminative representation learning, large scale Machine learning. He serves as a reviewer for premier conferences and journals in the fields of computer vision and pattern recognition. He is a leading guest editor for Pattern Recognition, special issue on Discriminative Feature Learning from Big Data for Visual Recognition.

All are welcome! For enquiries, please call 2859 2180 or email enquiry@cs.hku.hk
Department of Computer Science
The University of Hong Kong