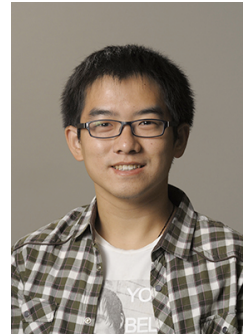


When: Friday 13:50 – 14:50

Where: ETB 1035

Speaker: Prof. Atlas Zhangyang Wang

Assistant Professor
Department of Computer Science & Engineering
Texas A&M University



Title: Exploiting Low-Quality Visual Data using Deep Networks

Date: 09-15-2017

Abstract: While many sophisticated models are developed for visual information processing, very few pay attention to their usability in the presence of data quality degradations. Most successful models are trained and evaluated on high quality visual datasets. On the other hand, the data source often cannot be assured of high quality in practical scenarios. For example, video surveillance systems have to rely on cameras of very limited definitions, due to the prohibitive costs of installing high-definition cameras all around, leading to the practical need to recognize objects reliably from very low resolution images. Other quality factors, such as occlusion, motion blur, missing data and bad weather conditions, are also ubiquitous in the wild. The seminar will present a comprehensive and in-depth review, on the recent advances in the robust sensing, processing and understanding of low-quality visual data, using deep learning methods. I will mainly show how the image/video restoration and the visual recognition could be jointly optimized as one pipeline. Such an end-to-end optimization consistently achieves the superior performance over the traditional multi-stage pipelines. I will also demonstrate how our proposed approach largely improves a number of real-world applications.

Biography: Dr. Zhangyang (Atlas) Wang is an Assistant Professor of Computer Science and Engineering (CSE), at the Texas A&M University (TAMU). During 2012-2016, he was a Ph.D. student in the Electrical and Computer Engineering (ECE) Department, at the University of Illinois at Urbana-Champaign (UIUC), working with Professor Thomas S. Huang. Prior to that, he obtained the B.E. degree at the University of Science and Technology of China (USTC), in 2012. Dr. Wang's research has been addressing machine learning, computer vision and multimedia signal processing problems using advanced feature learning and optimization techniques. He has co-authored around 40 papers, and published several books and chapters. He has been granted 3 patents, and has received over 15 research awards and scholarships. His research has been covered by worldwide media, such as BBC, Fortune, International Business Times, UIUC news and alumni magazine. More could be found at: <http://www.atlaswang.com>