

## **T5A: Distance Metric Learning for Image and Video Understanding** (Room 208AB) [Top↑](#)

Speakers: Jiwen Lu (Tsinghua University, China)

### Abstract

Over the past decade, distance metric learning has been developed as one of the basic techniques in machine learning and successfully applied to a wide range of image and video understanding tasks showing state-of-the-art performance. In this tutorial, we will overview the trend of distance metric learning techniques and discuss how they are employed to boost the performance of various image and video understanding tasks. First, we briefly introduce the basic concept of distance metric learning, and show the key advantages and disadvantages of existing distance metric learning methods in different image and video understanding tasks. Second, we introduce some of our newly proposed distance metric learning methods from two aspects: sample-based metric learning and set-based metric learning, which are developed for different application-specific image and video understanding tasks, respectively. Lastly, we will discuss some open problems in distance metric learning to show how to further develop more advanced metric learning algorithms for image and video understanding in the future.

### Speaker Bio:

**Jiwen Lu** is currently an Associate Professor with the Department of Automation, Tsinghua University, China. His current research interests include computer vision, pattern recognition, and machine learning. He has authored/co-authored over 140 scientific papers in these areas, where 38 of them were the IEEE Transactions papers (including 4 PAMI and 10 T-IP papers) and 20 papers are published in top-tier computer vision conferences (ICCV/CVPR/ECCV). He is an elected member of the Information Forensics and Security Technical Committee of the IEEE Signal Processing Society, an Associate Editor for Pattern Recognition Letters, Neurocomputing, and IEEE Access, a Guest Editor for five journals such as Pattern Recognition, Computer Vision and Image Understanding, and Image and Vision Computing, and a reviewer for over 40 international journals such as IEEE T-PAMI/IP/CSVT. He serves/has served as an Area Chair for ICIP 2017, VCIP 2016, ICB 2016, BTAS 2016, WACV 2016, ICME 2015 and ICB 2015, a Workshop Chair for WACV 2017 and ACCV 2016, a Special Session Chair for VCIP 2015, and a technical program committee member for over 20 international conferences such as CVPR/ICCV/ECCV/NIPS/AAAI. He was a recipient of the Best Student Paper Award from the Pattern Recognition and Machine Intelligence Association (PREMIA) of Singapore in 2012, the Top 10% Best Paper Award from 2014 IEEE International Workshop on Multimedia Signal Processing (MMSP), and the National 1000 Young Talents Plan Program in 2015, respectively. Two of his authored/co-authored conference papers were nominated as the Best Paper Award Candidate in ICME 2011 and ICME 2013. He co-organizes several

workshops/competitions at some international conferences such as ICME 2017, FG 2015, ICME 2014, ACCV 2014, and IJCB 2014. He gave/will give tutorials at some international conferences including CVPR 2017, ECCV 2016, CVPR 2015, FG 2015, ACCV 2014, ICME 2014 and IJCB 2014. He is a Senior Member of the IEEE.