

T5B: Distance Metric Learning for Image and Video Understanding (Room 208AB) [Top↑](#)

Speakers: Ruiping Wang (Chinese Academy of Sciences, 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:

Ruiping Wang is an Associate Professor at the Institute of Computing Technology (ICT), Chinese Academy of Sciences (CAS). Prior to joining ICT in July 2012, he was a postdoctoral researcher with the Tsinghua University from July 2010 to June 2012. He also spent one year working as a Research Associate with the University of Maryland, College Park, from Nov. 2010 to Oct. 2011. He has published more than 40 papers in peer-reviewed journals and conferences, including IEEE TPAMI, TIP, TMM, PR, CVPR, ICCV, ICML, and has received the Best Student Poster Award Runner-up from IEEE CVPR 2008 for the work on Manifold-Manifold Distance. He is a Guest Editor for Pattern Recognition and serves as regular reviewer/PC member for a number of leading journals and conferences, e.g. IEEE TPAMI, TIP, TCSVT, TMM, TNNLS, IJCV, ICCV, CVPR, and ECCV. He has co-organized tutorials in ACCV 2014 and CVPR 2015, and workshop at ACCV 2016. He has given invited talks in workshops of ICME 2014, ACCV 2014 and ICCV 2015. His current research interests include video-based face recognition/retrieval, facial expression analysis, image set classification, distance metric learning, and manifold learning. He is a member of the IEEE.