

Domain Generalization for Visual Feature Representation Learning

by

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Abstract

Visual recognition tasks have been greatly benefited from the fast developments of deep learning approaches. Most deep learning based methods are based on the strong assumption that the training and test data are drawn from similar feature spaces and distributions. However, such assumption may not always be valid in realistic scenarios or applications since distribution shift always exists between training/test data. In this talk, I will introduce several deep learning based Domain Generalization approaches to tackle the distribution shift where the testing data are drawn from unseen but related domain compared with the training data. The introduced methods are based on scientifically sound machine learning algorithms such as unsupervised learning, adversarial learning, kernel mean embedding. Moreover, I will further discuss some successful applications of domain generalization in realistic scenarios, such as face spoofing detection and medical imaging classification.

Biography



Dr Haoliang Li obtained his B.Eng degree from University of Electronic Science and Technology of China in 2013, and the Ph.D. degree from Nanyang Technological University (NTU), Singapore, in 2018. He was a research fellow from July 2018 to May 2019 affiliated with Rapid-Rich Object Search Lab, NTU. He is now a Wallenberg-NTU presidential postdoc fellow in NTU. His research interest includes machine learning, computer vision, AI security. His research works has been published in the top-tier journals/conferences, such as T-PAMI, IJCV, T-IFS, NeurIPS, CVPR, AAAI. He received the NTU doctorate innovation award in 2019, and the best paper award of IEEE VCIP conference in 2020.

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