Department of Computer Science
香港城市大學
City University of Hong Kong

COMPUTER SCIENCE COLLOQUIUM

Machine Learning with Noisy Labels

SPEAKER **Prof Tongliang Liu**

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DATE 16 Jan, 2025 (Thu)
TIME 10:00 AM - 11:30 AM
VENUE CS Seminar Room, Y6405, 6th Floor, Yellow Zone, Yeung Kin Man Academic Building, City University of Hong Kong, 83 Tat Chee Avenue, Kowloon Tong

ABSTRACT

With the rise of large AI models, data assets have gained increasing importance. Understanding how to identify and correct label errors in our datasets is crucial. This is because label errors are pervasive in the era of big data and rectifying them can significantly enhance our knowledge. Moreover, large AI models are prone to overfitting label errors, which hinders their ability to generalize. In this talk, we will present typical approaches to handle label noise, such as extracting confident examples (indicating likely correct/incorrect labels) using deep network properties. Additionally, we will explore methods that focus on directly modelling the label noise, providing theoretical guarantees for designing statistically consistent algorithms. By illustrating the intuitions behind state-of-the-art techniques, we would equip researchers and practitioners with valuable insights into effectively managing label noise.

BIOGRAPHY

Tongliang Liu is the Director of Sydney AI Centre at the University of Sydney. He is a Visiting Professor of University of Science and Technology of China, Hefei, China; an Affiliated Professor in Machine Learning with Mohamed bin Zayed University of Artificial Intelligence, Abu Dhabi, United Arab Emirates; a Visiting Scientist of RIKEN AIP, Tokyo, Japan. He is broadly interested in the fields of trustworthy machine learning and its interdisciplinary applications, with a particular emphasis on learning with noisy labels, adversarial learning, causal representation learning, transfer learning, unsupervised learning, and statistical deep learning theory. He has authored and co-authored more than 200 research articles including ICML, NeurIPS, ICLR, CVPR, ICCV, ECCV, AAAI, IJCAI, JMLR, and TPAMI. He is/was a senior-meta reviewer for many conferences, such as NeurIPS, ICLR, AAAI, and IJCAI. He is a co-Editor-in-Chief for Neural Networks, an Associate Editor of IEEE TPAMI, IEEE TIP, TMLR, and ACM Computing Surveys, and is on the Editorial Boards of JMLR and MLJ. He is a recipient of CORE Award for Outstanding Research Contribution in 2024, the IEEE AI's 10 to Watch Award in 2022, the Future Fellowship Award from Australian Research Council in 2022, the Top-40 Early Achievers by The Australian in 2020, and the Discovery Early Career Researcher Award from Australian Research Council in 2018.

All are welcome!

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