Department of Computer Science
香港城市大學
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COMPUTER SCIENCE COLLOQUIUM

Trustworthy Multi-Expert Transfer through Transferability Estimation

SPEAKER **Prof. Yang Li**

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TIME 10:00 AM - 12:00 PM
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

As foundation models become central repositories of general knowledge, transfer learning has become essential for adapting this knowledge to domain-specific tasks, often under constraints such as privacy, limited data, or compute. These models, or their domain-adapted variants, can be viewed as experts with complementary strengths. A key challenge is ensuring trustworthy transfer: knowing when to transfer, how much to transfer, and how to do so effectively under dynamic conditions. In this talk, we present an information-theoretic perspective on transferability estimation as a foundation for robust and interpretable knowledge transfer. Centered around the proposed transferability metric, H-score, our framework enables principled expert collaboration in both model-based and prompt-based transfer, by identifying optimal expert ensembles tailored to downstream tasks. This framework supports both static settings, where all experts are available upfront, and dynamic scenarios, such as continual learning, where new experts emerge over time.

BIOGRAPHY

Prof. Yang Li received her B.A. degree and PhD mathematics and computer science from Smith College in 2011, and the Ph.D. degree in computer science from Stanford University in 2017. She has joined Tsinghua Shenzhen International Graduate School (previously Tsinghua-Berkeley Shenzhen Institute) since 2017, currently serving as an Associate Professor in the Institute of Data and Information, and a principal investigator in the Shenzhen Key Laboratory of Ubiquitous Data Enabling. Her research focuses on developing trustworthy machine learning methods, particularly in transfer learning, model adaptability, and explainability, with applications in medical image understanding. She is an Associate Editor for Franklin Open and a member of the editorial board of Digital Signal Processing. Her works have been published in top conferences such as CVPR, ICML, AAAI, and in journals including IEEE TNNLS.

All are welcome!

In case of questions, please contact Prof Linqi Song at linqi.song@cityu.edu.hk, or visit the CS Departmental Seminar Web at https://www.cs.cityu.edu.hk/events/cs-seminars/recent-cs-colloquiums.