



北京大学
Peking University

报告地点： 王克桢楼1003

时间: 8月16日 10:00 - 11:30

COOL RESEARCH

系列报告第十二讲

报告人： Anqi Liu (约翰霍普金斯大学助理教授)

报告题目： Trustworthy Machine Learning
in the Real World: Distributional Robust
Extrapolation

Control, Optimization, Operations research, and Learning (COOL) Research Seminar是由北大工学院相关领域的几位老师发起，旨在为国内外青年学者提供一个交流平台，分享和探讨最新最有趣的研究成果，促进领域内和跨领域沟通学习，推动前沿理论的发展。





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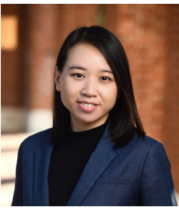
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Trustworthy Machine Learning in the Real World: Distributional Robust Extrapolation

Abstract: The unprecedented prediction accuracy of modern machine learning beckons for its application in a wide range of real-world applications, including autonomous robots, healthcare, scientific experimental design, and many others. A key challenge in such real-world applications is that the test cases are not well represented by the pre-collected training data. To properly leverage learning in such domains, we must go beyond the conventional learning paradigm of maximizing average prediction accuracy with generalization guarantees that rely on strong distributional relationships between training and test examples. In this talk, I will describe a distributionally robust learning framework that offers rigorous guarantees under data distribution shift. This framework yields appropriately conservative yet still accurate predictions to guide real-world decision-making and is easily integrated with modern deep learning. I will showcase the practicality of this framework in applications on safe data collection and experimental design in robotics. I will also introduce a survey of other real-world applications that can benefit from this framework.



报告人: Anqi Liu (约翰霍普金斯大学助理教授)

报告人简介: Anqi Liu is an Assistant Professor in the Department of Computer Science at the Whiting School of Engineering of the Johns Hopkins University. She is also affiliated with the JHU Mathematical Institute of Data Science and the JHU Institute of Assured Autonomy. She completed her postdoc at the California Institute of Technology and obtained her Ph.D. from the University of Illinois at Chicago. Her research focuses on enabling machine learning algorithms to be robust to the changing data and environments, to provide accurate and honest uncertainty estimates, and to consider human preferences and values in the interaction. She has been selected as the 2020 EECS Rising Stars. Her publications appear in top machine learning conferences like NeurIPS, ICML, ICLR, AAAI, and AISTATS.

主持人: 尤鹏程 (北京大学工学院助理教授)

