



北京大學
Peking University

报告地点: 新奥工学大楼2047

时间: 04月12日 13:30 - 15:00

COOL RESEARCH

系列报告第十九讲

报告人: Christopher Yeh (加州理工大学博士生)

报告题目: Learning for Robust Decision
Making in Energy Systems

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。





北京大学
PEKING UNIVERSITY

COLLEGE OF
ENGINEERING
工学院

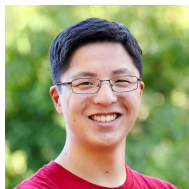
报告地点: 新奥工学大楼2047

时间: 04月12日 13:30 - 15:00

COOL RESEARCH 系列报告第十九讲

Learning for Robust Decision Making in Energy Systems

Abstract: This talk presents two works that combine machine learning with robust decision making in energy systems. The first work, SustainGym, is the first test bed for multi-agent distributionally robust reinforcement learning (RL), with a focus on modeling realistic energy systems. To date, very few RL environments focus on distributionally robust RL, and even fewer feature sustainability applications. SustainGym fills this gap, providing an easy-to-use and well-documented RL environment suite focused on sustainable, carbon-aware energy systems. The second work describes the first algorithm known to achieve a finite-mistake guarantee for the problem on online voltage control when the distribution grid topology is unknown. This algorithm elegantly combines ideas from convex body chasing with robust control. Finally, the talk will conclude with some potential future work at the intersection of machine learning, uncertainty quantification, and robust online decision-making.



Speaker: Christopher Yeh (PhD student at Caltech)

Biography: Christopher Yeh is a 4th-year PhD student in the Computing and Mathematical Sciences (CMS) program at the California Institute of Technology (Caltech). Advised by Professors Yisong Yue and Adam Wierman, Chris's research combines theoretical tools from uncertainty quantification and online decision-making with applications

in sustainable energy systems. He is a Caltech Resnick Sustainability Institute Scholar and is funded by a Caltech Amazon AWS AI for Science Fellowship. He received B.S. and M.S. degrees in computer science from Stanford University where he worked with Professor Stefano Ermon, and he also spent a year in Beijing as a Schwarzman Scholar at Tsinghua University.

主持人: 尤鹏程 (北京大学工学院助理教授)

