



School of Data Science

香港城市大學
City University of Hong Kong

Towards Intelligent Decision-making with Guaranteed Trustworthiness

Date: 24 March 2023 (Friday)

Time: 9:30am - 10:30am

Seminar link: <https://cityu.zoom.us/j/91088236391>



ABSTRACT

In intelligent decision-making, machine learning (ML) models are used to represent the policies for action selection in the online decision processes. The ML policies are required to guarantee trustworthiness (e.g. robustness and safety) to be used in many computing systems including cloud/edge computing, cyber physical systems, networked systems, etc. Achieving the trustworthiness, however, is challenging due to the uncertainty of future information in the online settings. The current literature on constrained policy design guarantees the trustworthiness constraints in expectation or with a high probability, which is not enough to guarantee the trustworthiness for any instance including the outliers and adversarial ones. In this talk, I will present the trustworthy designs with the goal of optimizing the utility while guaranteeing the trustworthiness constraints for any instance. The ML policies are designed to achieve trustworthiness guarantee for known model and unknown model settings. Also, the designs are proved to achieve the optimized utility under the trustworthiness guarantee. In addition, I will present some application examples of the trustworthiness designs for online allocation and networked systems, followed by future perspectives.

ONLINE SEMINAR



Mr Jianyi YANG

GUEST SPEAKER'S PROFILE

Mr Jianyi Yang is currently a PhD candidate in Electrical and Computer Engineering Department at University of California, Riverside. His research lies in machine learning and optimization, as well as their applications in computing systems including edge computing and carbon intelligent computing. His recent research topics include trustworthy machine learning for decision processes and optimization for learning with domain knowledge. His recent works are published in top venues including SIGMETRICS, ICML, AAI, INFOCOM, etc. He received Bachelor's degree from Xidian University in 2015 and Master's degree from Beijing University of Posts and Telecommunications in 2018.

All are welcome

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