University of California, Irvine
Statistics Seminar

Statistical Inference in Reinforcement Learning

Chengchun Shi
Associate Professor, Department of Statistics
London School of Economics and Political Science

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Reinforcement learning (RL) is concerned with how intelligence agents take actions in a given environment to maximize the cumulative reward they receive. In healthcare, applying RL algorithms could assist patients in improving their health status. In ride-sharing platforms, applying RL algorithms could increase drivers' income and customer satisfaction. RL has been arguably one of the most vibrant research frontiers in machine learning over the last few years. Nevertheless, statistics as a field, as opposed to computer science, has only recently begun to engage with reinforcement learning both in depth and in breadth. In today's talk, I will discuss some of my recent work on developing statistical inferential tools for reinforcement learning, with applications to mobile health and ridesharing companies. The talk will cover several different papers published in highly-ranked statistical journals (JASA & JRSSB) and top machine learning conferences (ICML).