

## Data Science Seminar

Hosted by the Department of Mathematics and Statistics

- Date: Tuesday, November 8, 2022
- Time: 12:00pm - 1:00pm
- Room: Via Zoom
- Speaker: Dr. Rui Song (senior principal scientist at Amazon; Professor at North Carolina State University)
- Title: On statistical inference for sequential decision making.

### **Abstract**

Reinforcement learning is a general technique that allows an agent to learn an optimal policy and interact with an environment in sequential decision making problems. The goodness of a policy is measured by its value function starting from some initial state. This talk includes a few topics about constructing statistical inference for a policy's value in infinite horizon settings where the number of decision points diverges to infinity. Applications in real world examples will also be discussed.

Biography of the speaker: Dr. Song is currently a senior principal scientist at Amazon. She got her PhD in Statistics from University of Wisconsin in 2006 and has been a faculty member at North Carolina State University since 2012. Her recent research focuses on adapting statistical advances to make optimal treatment decisions for an individual patient, based on all information available for that patient. She develops efficient and powerful statistical approaches to use personalized, multi-stage information of patients in modeling, estimation, inference, selection of important prognostic factors and evaluating treatment responses for personalized treatment discoveries. Her research has been supported as principal investigator by National Science Foundation (NSF) including the NSF Faculty Early Career Development (CAREER) Award. She has served as an associate editor for several statistical journals. She is an elected Fellow of the American Statistical Association and Institute of Mathematical Statistics.

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