

Wen Sun

Carnegie Mellon University
School of Computer Science
Robotics Institute

Phone: (919)451-3502
Email: wensun@andrew.cmu.edu
Homepage: <http://www.cs.cmu.edu/~wensun>

Education

Ph.D. Candidate, Robotics Institute, School of Computer Science, Carnegie Mellon University, USA.

M.S. Computer Science, University of North Carolina at Chapel Hill, USA, 2014.

B.S with Distinction. Computer Science, Simon Fraser University, Canada, 2012.

Publications

Ahmed Hefny, Zita Marinho, Wen Sun, Siddhartha Srinivasa, Geoffrey Gordon, "Recurrent Predictive State Policy Networks," in *International Conference on Machine Learning (ICML)*, 2018

Wen Sun, J. Andrew Bagnell, Byron Boots, "Truncated Horizon Policy Search: Combining Reinforcement Learning and Imitation Learning," in *International Conference on Learning Representation (ICLR)*, 2018.

Huaian Diao*, Zhao Song*, Wen Sun*, David Woodruff*, "Sketching for Kronecker Product Regression and P-splines," in *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2018.

Wen Sun, Arun Venkatraman, Geoff Gordon, Byron Boots, J. Andrew Bagnell, "Deeply AggreVaTeD: Differentiable Imitation Learning for Sequential Prediction," in *International Conference on Machine Learning (ICML)*, 2017.

Wen Sun, Debadeepta Dey, Ashish Kapoor, "Safety-Aware Algorithms for Adversarial Contextual Bandits," in *International Conference on Machine Learning (ICML)*, 2017.

Arun Venkatraman, Nicholas Rhinehart, Wen Sun, Lerrel Pinto, Martial Hebert, Byron Boots, Kris M. Kitani, J. Andrew Bagnell, "Predictive-State Decoders: Encoding the Future into Recurrent Networks," in *Neural Information Processing Systems (NIPS)*, 2017

Wen Sun, Niteesh Sood, Debadeepta Dey, Gireeja Ranade, Siddharth Prakash, Ashish Kapoor, "No-Regret Replanning Under Uncertainty," in *International Conference on Robotics and Automation (ICRA)*, 2017

Hanzhang Hu, Wen Sun, Arun Venkatraman, Martial Hebert, and J. Andrew Bagnell, "Online Gradient Boosting on Stochastic Data Streams", in *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2017.

Wen Sun, Arun Venkatraman, Byron Boots, J. Andrew Bagnell, "Learning to Filter with Predictive State Inference Machines," in *International Conference on Machine Learning (ICML)*, 2016.

Wen Sun, Roberto Capobianco, Geoffrey J. Gordon, J. Andrew Bagnell, Byron Boots, "Learning to Smooth with Bidirectional Predictive State Inference Machines," in *Uncertainty in Artificial Intelligence (UAI)*, 2016.

Arun Venkatraman, Wen Sun, Martial Hebert, Byron Boots, and J. Andrew Bagnell, "Inference Machines for Nonparametric Filter Learning," in *International Joint Conference on Artificial Intelligence (IJ-CAI)*, 2016.

Arun Venkatraman, Wen Sun, Martial Hebert, J. Andrew Bagnell, Byron Boots, "Online Instrumental Variable Regression with Applications to Online Linear System Identification," in *AAAI Conference on Artificial Intelligence (AAAI)*, 2016.

Wen Sun, J. Andrew Bagnell, "Online Bellman Residual Algorithms with Predictive Error Guarantees," in *Uncertainty in Artificial Intelligence (UAI)*, 2015. (**Best Student Paper Award**)

(* indicates α - β order)

Employment

Research Intern

May-August, 2018

Microsoft Research, New York, USA

Advisor: Dr. John Langford

Worked on a new Reinforcement Learning framework named Contextual Decision Processes. Studied and explored both the statistical efficiency and computational efficiency of learning to optimize contextual decision processes.

Research Intern

May-August, 2017

Yahoo Research, New York, USA

Advisor: Dr. Alina Beygelzimer

Worked on a new problem named *Contextual Memory*. Designed and studied the feasibility of a learning memory controller which inserts new memories into an experience store of effectively unbounded size and optimizes queries for memories from the same experience store.

Research Intern

May-August, 2016

Microsoft Research, Redmond, USA

Advisor: Dr. Ashish Kapoor

Studied the problem of risk-aware adversarial contextual bandits. Developed an algorithm that explicitly considers risk constraints while performing exploration. The developed algorithm achieves near-optimal regret in terms of reward while satisfying the risk constraint in average.

Teaching

Teaching Assistant: ROB 16831 Statistical Techniques in Robotics, CMU, Fall 2017.

Guest Lecturer: ROB 16831 Statistical Techniques in Robotics, CMU, Fall 2017, Spring 2018.

Professional Service

Journal and Conference Article Reviewing

Neural Information Processing Systems (NIPS), 2016, 2018

Conference on Artificial Intelligence (AAAI), 2019

Conference of Robot Learning (CORL), 2018

Robotics: Science and Systems (RSS), 2016

IEEE International Conference on Intelligent Robots and Systems (IROS), 2014,2015,2016

IEEE International Conference on Robotics and Automation (ICRA), 2016, 2017, 2018