

Johns Hopkins Institute for Assured Autonomy
and the Department of Computer Science

Present

Designing Cooperative and Socially-Aware Autonomy



Dr. Alyssa Pierson
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Assistant Professor of
Mechanical Engineering

March 16, 2021 | 11:00 am–Noon
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ABSTRACT

Robots will transform our everyday lives, from home service and personal mobility, to large-scale warehouse management and agriculture monitoring. Across these applications, robots need to interact with humans and other robots in complex, dynamic environments. Understanding how robots interact allows us to design safer and more robust systems. This talk presents an overview on how we can integrate underlying cooperation and interaction models into the design of the robot teams. We use tools from behavioral decision theory to design interaction models, combined with game theory and control theory to develop distributed control strategies with provable performance guarantees. This talk focuses on applications in autonomous driving, where better understanding of human intent improves safety, as well as exploring recent results in designing UVC-equipped mobile robots for human-centric environments.

BIO

Alyssa Pierson is an Assistant Professor of Mechanical Engineering at Boston University. Her research interests include trust and cooperation in multi-agent systems, distributed robotics control, and socially-compliant autonomous system design. She focuses on designing robotic systems that interact with humans and other robots in complex, dynamic environments.

Prior to joining BU, Professor Pierson was a research scientist with the Computer Science and Artificial Intelligence Laboratory (CSAIL) at MIT. She received her PhD degree from Boston University in 2017 and BS in Engineering from Harvey Mudd College. During her PhD, she was awarded the Clare Booth Luce Fellowship and was a Best Paper Finalist at the 2016 International Conference on Robotics and Automation.

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