

James Queeney

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RESEARCH SKILLS

I am interested in developing reliable, data-driven algorithms for decision making and control, with applications in robotics. My research focuses on the need for robustness, safety, and generalization in robot learning frameworks, including deep reinforcement learning, imitation learning, and self-supervised learning. I have explored these topics for single-agent robotic control and multi-agent robot coordination.

- **Research Areas:** deep reinforcement learning, imitation learning, self-supervised learning, robust data-driven optimization and control, uncertainty quantification, robotics
- **Programming Languages:** Python, MATLAB, R
- **Software Experience:** Gurobi, Isaac Lab, MuJoCo, PyTorch, Ray, TensorFlow
- **Hardware Experience:** sim-to-real policy transfer on Unitree Go2 quadruped robot

EDUCATION

Boston University Aug 2023

PhD in Systems Engineering

- Dissertation: “Reliable deep reinforcement learning: Stable training and robust deployment”

Boston University Jan 2022

MS in Systems Engineering

Colgate University May 2013

BA in Mathematics and Mathematical Economics

- Class of 2013 Valedictorian, Honors in Mathematics, Phi Beta Kappa, Summa Cum Laude

RESEARCH EXPERIENCE

Research Scientist 2025 – Present

Amazon Robotics

- Topic: Optimization, planning, and task assignment for multi-agent robotic systems

Postdoctoral Research Fellow 2023 – 2025

Mitsubishi Electric Research Laboratories

- Topic: Robustness, safety, and generalization in learning-based robotic control

Research Affiliate 2023 – 2025

Massachusetts Institute of Technology – Host: Jonathan How

- Topic: Uncertainty-aware learning for robust planning and control of mobile robots

Doctoral Research Fellow 2019 – 2023

Boston University – Advisors: Ioannis Paschalidis, Christos Cassandras

- Topic: Reliable deep reinforcement learning with performance guarantees

Research Intern Summer 2022

Mitsubishi Electric Research Laboratories – Host: Mouhacine Benosman

- Publication: “Risk-averse model uncertainty for distributionally robust safe reinforcement learning”

Research Assistant <i>Colgate University – Host: William Cipolli</i> • Topic: Bayesian non-parametric approaches to supervised learning with Polya trees	2017 – 2018
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INDUSTRY EXPERIENCE

Director of Operations Research <i>Bargain Hunt</i>	2017 – 2018
Private Equity Associate <i>Thomas H. Lee Partners – Consumer & Healthcare Group</i>	2015 – 2017
Investment Banking Analyst <i>Bank of America Merrill Lynch – Mergers & Acquisitions Group</i>	2013 – 2015

TEACHING AND OUTREACH

CISE Graduate Student Workshop Organizer <i>Boston University Center for Information & Systems Engineering</i>	Jan 2023
Graduate Teaching Fellow <i>Boston University – Optimization Theory and Methods (SE 674)</i>	Fall 2022
Research Mentor <i>Boston University Research in Science & Engineering Program</i>	Summer 2021
Graduate Teaching Fellow <i>Boston University – Introduction to Programming for Engineers (EK 125)</i>	Fall 2019

PUBLICATIONS

Peer-Reviewed Publications

- Queeney, J., Cai, X., Schperberg, A., Corcodel, R., Benosman, M., and How, J. P. (2025). GRAM: Generalization in deep RL with a robust adaptation module. To appear in *IEEE Robotics and Automation Letters (RA-L)*.
- Giammarino, V., Queeney, J., and Paschalidis, I. C. (2025). Visually robust adversarial imitation learning from videos with contrastive learning. In *IEEE International Conference on Robotics and Automation (ICRA 2025)*.
- Cai, X., Queeney, J., Xu, T., Datar, A., Pan, C., Miller, M., Flather, A., Osteen, P. R., Roy, N., Xiao, X., and How, J. P. (2025). PIETRA: Physics-informed evidential learning for traversing out-of-distribution terrain. *IEEE Robotics and Automation Letters (RA-L)*.
- Queeney, J., Paschalidis, I. C., and Cassandras, C. G. (2025). Generalized policy improvement algorithms with theoretically supported sample reuse. *IEEE Transactions on Automatic Control (TAC)*.
- Ozcan, E. C., Giammarino, V., Queeney, J., and Paschalidis, I. C. (2024). A model-based approach for improving reinforcement learning efficiency leveraging expert observations. In *63rd IEEE Conference on Decision and Control (CDC 2024)*.
- Giammarino, V., Queeney, J., and Paschalidis, I. C. (2024). Adversarial imitation learning from visual observations using latent information. *Transactions on Machine Learning Research (TMLR)*.
- Queeney, J., Ozcan, E. C., Paschalidis, I. C., and Cassandras, C. G. (2024). Optimal transport perturbations for safe reinforcement learning with robustness guarantees. *Transactions on Machine Learning Research (TMLR)*.

- Queeney, J. and Benosman, M. (2023). Risk-averse model uncertainty for distributionally robust safe reinforcement learning. In *Advances in Neural Information Processing Systems (NeurIPS 2023)*.
- Giammarino, V., Queeney, J., Carstensen, L. C., Hasselmo, M. E., and Paschalidis, I. C. (2023). Opportunities and challenges from using animal videos in reinforcement learning for navigation. In *The 22nd World Congress of the International Federation of Automatic Control (IFAC 2023)*.
- Queeney, J., Paschalidis, I. C., and Cassandras, C. G. (2021). Generalized proximal policy optimization with sample reuse. In *Advances in Neural Information Processing Systems (NeurIPS 2021)*.
- Queeney, J., Paschalidis, I. C., and Cassandras, C. G. (2021). Uncertainty-aware policy optimization: A robust, adaptive trust region approach. In *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI 2021)*.

Preprints

- Chen, Y., Giammarino, V., Queeney, J., and Paschalidis, I. C. (2024). Provably efficient off-policy adversarial imitation learning with convergence guarantees. arXiv:2405.16668.

Dissertation

- Queeney, J. (2023). *Reliable deep reinforcement learning: Stable training and robust deployment*. PhD thesis, Boston University.

PRESENTATIONS

- Reliable deep reinforcement learning for robotics (2025). *Amazon Robotics Invited Talk*, Virtual.
- Risk-averse model uncertainty for distributionally robust safe reinforcement learning (2023). *37th Conference on Neural Information Processing Systems (NeurIPS 2023)*, New Orleans, LA.
- Reliable deep reinforcement learning: Stable training and robust deployment (2023). *Boston University Division of Systems Engineering PhD Final Defense*, Boston, MA.
- Reliable deep reinforcement learning with robustness and safety guarantees (2023). *Mitsubishi Electric Research Laboratories Invited Talk*, Cambridge, MA.
- Safe reinforcement learning with robustness guarantees (2023). *Massachusetts Institute of Technology Invited Talk*, Cambridge, MA.
- Balancing stability and efficiency in deep reinforcement learning (2023). *Harvard University Invited Talk*, Cambridge, MA.
- Stable and efficient reinforcement learning with principled sample reuse (2022). *CISE Graduate Student Workshop 8.0*, Boston, MA. **Best Presenter Award**.
- Robust and efficient reinforcement learning from limited data (2021). *Boston University Division of Systems Engineering PhD Prospectus Defense*, Boston, MA.
- Generalized proximal policy optimization with sample reuse (2021). *35th Conference on Neural Information Processing Systems (NeurIPS 2021)*, Virtual.
- Uncertainty-aware policy optimization: A robust, adaptive trust region approach (2021). *CISE Best Student Paper Awards Presentation*, Virtual. **Best Student Paper Award Finalist**.
- Uncertainty-aware policy optimization: A robust, adaptive trust region approach (2021). *35th AAAI Conference on Artificial Intelligence (AAAI 2021)*, Virtual.

HONORS AND AWARDS

• Doctoral Research Fellow, <i>Boston University</i>	2019 – 2023
• CISE Best Student Paper Award Finalist, <i>Boston University</i>	2022
• CISE Graduate Student Workshop Best Presenter Award, <i>Boston University</i>	2022
• CISE Best Student Paper Award Finalist, <i>Boston University</i>	2021
• Dean's Fellowship Award, <i>Boston University</i>	2018 – 2019
• Class of 2013 Valedictorian, <i>Colgate University</i>	2013
• Osborne Mathematics Prize, <i>Colgate University</i>	2013
• Phi Beta Kappa Award, <i>Colgate University</i>	2013
• Phi Beta Kappa, <i>Colgate University</i>	2013
• Summa Cum Laude, <i>Colgate University</i>	2013
• Honors in Mathematics, <i>Colgate University</i>	2013
• John T. Mitchell Award, <i>Colgate University</i>	2012 – 2013
• Charles A. Dana Scholar, <i>Colgate University</i>	2011 – 2013
• Alumni Memorial Scholar, <i>Colgate University</i>	2009 – 2013
• Sisson Mathematics Prize, <i>Colgate University</i>	2010
• Dodge Prize, <i>Colgate University</i>	2010