James Queeney

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RESEARCH INTERESTS

I am a fifth-year PhD candidate interested in developing theoretically supported deep reinforcement learning algorithms, with a focus on addressing barriers for real-world deployment. My current work considers the need for robustness, safety, and generalization in deep reinforcement learning.

EDUCATION

Boston University Expected Summer 2023
PhD Candidate in Systems Engineering

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

Doctoral Research Fellow 2019 – Present
Boston University – Advisors: Ioannis Paschalidis, Christos Cassandras
- Design robust, safe, and efficient deep reinforcement learning algorithms 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 2017 – 2018
Colgate University – Host: William Cipolli
- Implemented Bayesian non-parametric approaches to supervised learning with Polya trees

TEACHING AND OUTREACH

CISE Graduate Student Workshop Organizer Jan 2023
Boston University Center for Information & Systems Engineering
- Reviewed abstracts, selected speakers, created schedule, and hosted workshop

Graduate Teaching Fellow Fall 2022
Boston University – Optimization Theory and Methods (SE 674)
- Taught weekly recitation section and held office hours for graduate-level engineering course

Research Mentor Summer 2021
Boston University Research in Science & Engineering Program
- Advised high school student in reinforcement learning research project on rodent navigation

Graduate Teaching Fellow Fall 2019
Boston University – Introduction to Programming for Engineers (EK 125)
- Led classes and lab sessions, held office hours, graded assignments, and managed TAs

INDUSTRY EXPERIENCE

Director of Operations Research 2017 – 2018
Bargain Hunt

Private Equity Associate 2015 – 2017
Thomas H. Lee Partners – Consumer & Healthcare Group

Investment Banking Analyst 2013 – 2015
Bank of America Merrill Lynch – Mergers & Acquisitions Group

PUBLICATIONS

- **Queeney, J.**, Ozcan, E. C., Paschalidis, I. C., and Cassandras, C. G. (2023). Optimal transport perturbations for safe reinforcement learning with robustness guarantees. arXiv preprint, arXiv:2301.13375.
- **Queeney, J.** and Benosman, M. (2023). Risk-averse model uncertainty for distributionally robust safe reinforcement learning. arXiv preprint, arXiv:2301.12593.
- Giammarino, V., **Queeney, J.**, Carstensen, L. C., Hasselmo, M. E., and Paschalidis, I. C. (2022). Opportunities and challenges from using animal videos in reinforcement learning for navigation. arXiv preprint, arXiv:2209.12347.
- **Queeney, J.**, Paschalidis, I. C., and Cassandras, C. G. (2022). Generalized policy improvement algorithms with theoretically supported sample reuse. arXiv preprint, arXiv:2206.13714.
- **Queeney, J.**, Paschalidis, I. C., and Cassandras, C. G. (2021). Generalized proximal policy optimization with sample reuse. In *Advances in Neural Information Processing Systems*, volume 34. Curran Associates, Inc.
- **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*, volume 35, pages 9377-9385. AAAI Press.

PRESENTATIONS

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

SKILLS

- **Programming Languages**: Python, MATLAB, R
- **Software**: DeepMind Control Suite, Gurobi, MuJoCo, OpenAI Gym, TensorFlow