Austin M. Jones

Research Scientist | Systems Engineer

linkedin.com/in/austinmjonesphd Google Scholar
+1 270 836 5154 austinmjonesresearch@gmail.com
Framingham, Massachusetts

Areas of Expertise

Formal Methods	Verification, Formal Synthesis, Specification Languages, Model Checking
Robotics	Planning, Control, Multi-Agent Systems
Machine Learning	Classification, Regression, Reinforcement Learning
Optimization	Convex Optimization, Integer Optimization, Stochastic Optimization

Education

2015 Ph.D., Systems Engineering, Boston University
2010 B.S., M.S., Systems Science, Washington University in Saint Louis

Professional Experience

Present – 2016 — **Full Technical Staff, MIT Lincoln Laboratory, Lexington, Massachusetts**

- Collaborate in inter-disciplinary teams to develop practical architectures and algorithms that meet "real-world" requirements
- Perform original research in differential privacy, verification of neural networks, and active machine learning
- Frequently selected to present results to government sponsors and stakeholders
- Led algorithm and software development for a dynamic resource allocation decision support tool
- Awarded competitive internal research and development funding to develop Inter- and Intra-Team Coordination from High-level Specifications, a suite of formal methods-based algorithms for planning and execution for teams of heterogeneous robots
- Recruited and mentored five graduate student interns to perform original research in neural network verification, learning from demonstration, formal synthesis, and distributed mixed integer optimization

2016 – 2015 — **Post-Doctoral Research Fellow, Georgia Institute of Technology, Atlanta, Georgia**

- Applied formal methods to bipedal robotics, adaptive cruise control, and precision agriculture
- Collaborated with optimal control researchers to develop a formal methods algorithm for optimal mode switching

2014 – 2014 — **Summer Research Intern, MIT Lincoln Laboratory, Lexington, Massachusetts**

- Developed and prototyped multiple sensor resource management algorithms

2015 – 2011 — **Graduate Research Assistant, Boston University, Boston, Massachusetts**

- Developed algorithms for planning in partially observed environments under rich, temporal logic specifications
- Validated algorithms experimentally using quadrotors
- Developed machine learning algorithms for inferring high-level behaviors from traces of cyber-physical systems
- Validated learning algorithms on synthetic gene circuit, braking, and traffic models
- Developed novel specification languages and planning algorithms for robots navigating in partially observed environments, robots swapping positions in a formation, and for spatiotemporal planning in cyber-physical systems

2011 – 2010 — **Research Scientist, Numerica, Loveland, Colorado**

- Developed, analyzed, and tested via simulation optimal detection, estimation, and data fusion algorithms

</> Programming Languages

Matlab	●●●●●
Python	●●●●○
Julia	●●●●○

Honors and Awards

2018	Defense Advanced Research Projects Agency (DARPA) Riser Selectee
2016	International Conference on Cyber-Physical Systems (ICCPS) Best Paper Nominee
2011	Dean's Fellowship, Boston University

Professional and Service Activities

2014-2019	Reviewer, IEEE Control Systems Society publications, IEEE Robotics and Automation Society publications, International Journal of Robotics Research, IEEE Transactions on Software Engineering
2016-2017	Volunteer Coach, FIRST Lego League
2015	Volunteer, Re:Imagine ATL