Mark Cutler

http://markjcutler.com | markjcutler@gmail.com | 617.871.0544

EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

PhD in Robotics and Autonomous Systems
Expected Aug 2015 | Cambridge, MA | GPA: 4.7 / 5.0
Thesis: *Practical Robot Reinforcement Learning through Efficient Simulator Sampling*
Committee: Prof. Jonathan P. How, Prof. Leslie Kaelbling, Dr. Andrea Censi

MS in Aeronautical and Astronautical Engineering
Aug 2012 | Cambridge, MA | GPA: 4.7 / 5.0
Thesis: *Design and Control of an Autonomous Variable-Pitch Quadrotor Helicopter*

BRIGHAM YOUNG UNIVERSITY

BS in Mechanical Engineering
Apr 2010 | Provo, UT | GPA: 3.99 / 4.0

SELECTED PUBLICATIONS

- **M. Cutler**, T. Walsh, J. How, Real-World Reinforcement Learning via Multi-Fidelity Simulators. *IEEE Transactions on Robotics*, to appear
- **M. Cutler**, J. How, Efficient Reinforcement Learning for Robots using Informative Simulated Priors. *IEEE International Conference on Robotics and Automation (ICRA)*, 2015
- **M. Cutler**, B. Michini, J. How, Lightweight Infrared Sensing for Relative Navigation of Quadrotors. *International Conference on Unmanned Aircraft Systems (ICUAS)*, 2013
- **M. Cutler**, J. How, Actuator Constrained Trajectory Generation and Control for Variable-Pitch Quadrotors. *AIAA Guidance, Navigation, and Control Conference (GNC)*, 2012

INDUSTRY EXPERIENCE

SPOTTERRF | Mechanical Design Engineer

May 2010 – Aug 2010 | Orem, UT

- Developed new heat management techniques for small radar devices resulting in over 20°C high-temperature performance increase
- Designed new carbon-fiber case for radar encasement

L-3 COMMUNICATIONS | Mechanical Design Engineer

May 2009 – Aug 2009 | Salt Lake City, UT

- Designed demo platform for new modem integration into mobile communication ground station
- Performed thermal, structural, weight, and power analyses to optimize data link and modem case designs

CORNING INC. | Advanced Machine Design Engineer

June 2008 – Aug 2008 | Corning, NY

- Researched and tested method that reduced tool run-out by 55% in contouring mills
- Designed mechanism enabling the cutting of ceramic extrusions to be performed by one person instead of two

SKILLS

PROGRAMMING

- Python
- Matlab
- C++
- C
- LaTeX

TOOLS

- ROS
- Git
- SVN
- SolidWorks

HARDWARE

- Embedded real-time microcontroller development
- PCB design (2- and 4-layer boards)
- SMD soldering
- Basic Machining (mill and lathe)

REL. COURSEWORK

Machine Learning
Inference and Information
Computational Congnitive Science
Real Analysis
Optimal Control
Stochasitc Estimation and Control
Feedback Control
Autonomy and Decision Making
Nonlinear Optimization
Computer Vision

VOLUNTEER

THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Volunteer Representative
July 2005 – July 2007 | Rostov, Russia

- Provided leadership, development and training for 16 volunteer representatives
- Oversaw volunteer operations in a geographical area covering over 300 miles