Noam Buckman

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Education

Massachusetts Institute of Technology — Cambridge, MA

Ph.D. in Mechanical Engineering (Robotics); Minor: Computer Science GPA: -/5.0 — *Sep. 2018 – present*

- **Awards**: National Defense Science and Engineering Graduate (NDSEG) Fellowship

M.S. in Mechanical Engineering (Robotics); GPA: 4.7/5.0 — *Feb. 2016 – Sep. 2018*

- **Courses**: Autonomy & Decision Making, Autonomous Vehicles, Estimation & Learning, Information Theory
- **Thesis**: Decentralized Task Allocation for Dynamic, Time-Sensitive Tasks

B.S. in Mathematics and Mechanical Engineering, Minor: Economics; GPA: 4.8/5.0 — *Aug. 2012 – Feb. 2016*

- **Courses**: Algorithms, Computation Structures, Discrete Applied Math, Nonlinear Dynamics, Product Design,
- **Honors**: Tau Beta Pi Engineering Honor Society, Pi Tau Sigma Mechanical Engineering Honor Society

Experience

MIT Distributed Robotics Lab — Cambridge, MA

PhD Student — *September 2018 - present*

- **Coordination with Implicit Communication for Self-Driving Cars**: Researching hybrid decentralized-centralized algorithm, autonomous-human systems, and system wide safety and optimization for self-driving applications

Aurora Flight Sciences — Cambridge, MA

Autonomy Intern — *Summer 2018*

- **Multivehicle Autonomous Coordination**: Developed and implemented planning algorithms for coordinating future network of air taxis in C++

MIT Laboratory for Information & Decision Systems — Cambridge, MA

Graduate Research Assistant, Adviser: Prof. Jonathan How — *Sep 2016 - June 2018*

- **Wireless Broadcasting for Robot Teams**: Studied effects of mesh communication on team-wide consensus using Raspberry Pi's (Presented at RSS 2018: Real Communication in Wild Workshop)
- **Decentralized Dynamic Task Allocation**: Created decentralized algorithm–CBBA with Partial Replanning– that can allocate tasks online with provable convergence. Convergence and optimality tested on homemade Python simulator and Raspberry Pi's. (Accepted at AAAI Guidance, Navagation & Control, Jan. 2019)

Woobo, Inc. — Cambridge, MA

Hardware/Robotics Intern — *Summer 2016*

- **Mechatronic Design**: Lead on electronics for interactive robotic companion, created custom circuits for I/O of the robot and mechanical actuation
- **Electronics Software Integration**: Developed Java library to control multiple sensors, LEDs, and motors to communicate with Android app backbone using IOIO microcontroller

MIT Department of Mechanical Engineering

Undergraduate Research Assistant, Adviser: Prof. Dick Yue — *June 2014 - May 2015*

- **Autonomous Buoys for Persistent Surveillance**: Designed, tested, and built buoy exterior design to minimize energy consumption, and implemented GPS sensor suite and motor controls with Adruino Mega. Created Python GUI for multi-robot monitoring and communication with XBee modules for effective real-time deployment

Technical Skills

Software: C++ (fluent), Python (fluent), Java (proficient), MATLAB (proficient), Linux, ROS, Git, LaTeX
Mechanical: SolidWorks, Arduino, Raspberry Pi, Electronics/Circuits, CFD, Machine Trained

Service and Leadership

MIT OpenCourseWare Faculty Advisory Committee: Graduate, Undergraduate Member — June 2015-present
MIT Presidential Committee on Future of OCW: Member — June 2016- Dec 2016
MIT Graduate Hillel: Treasurer — Nov 2016-present