Zachary Serlin

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DoD Secret Final Clearance Holder

Statement of Purpose

- To work on algorithm and hardware design for distributed robotic systems and distributed computer vision applications. Specifically in high level planning and control and distributed object matching.

Education

Present
- **Ph.D., Boston University** in Mechanical Engineering.
  4th Year - Doctoral Candidate
  Dissertation title: *Distributed Formal Methods and Sensing for Autonomous Systems*.

2016
- **M.Sc., Tufts University** in Mechanical Engineering.
  Honor Dual B.SC./M.Sc. Program
  Thesis title: *A Novel Approach for the Simulation of Xenopus laevis Tail Regeneration*.

2015
- **B.Sc., Tufts University** in Mechanical Engineering
  Magna Cum Laude
  Deans List all Semesters.

Experience

- **MIT Lincoln Laboratory | BMDS Student Technical Assistant | 9/2018 – Present**
  - Developed novel heterogeneous multi-robot planning algorithms.
  - Created a multi-robot planning algorithm for safety critical applications.
  - Tested novel algorithms with hardware-in-the-loop full scale experiment of 13 heterogeneous robots.

- **MIT Lincoln Laboratory | Surveillance Systems Summer Analyst | 5/2018 – 8/2018**
  - Developed novel multi-robot search algorithms.
  - Created a software-in-the-loop simulation environment to test novel algorithms.
  - Tested novel algorithms with hardware-in-the-loop full scale experiment in the field.

- **BU - Schlumberger-Doll Research Collaboration | Student Team Leader | 9/2016 – Present**
  - Explored combining Time-Window Temporal Logic planning and sampling based reactive planning.
  - Expanded capabilities of UWSIM simulation environment.
  - Team of 3 developed a reinforcement learning based algorithm for underwater vehicle autonomous operation.

- **Barrett Technology | Mechanical Engineering Intern | 6/2016 – 9/2016**
  - Designed components for FDA approved, Class II medical robot - BURT.
  - Generated process routers for construction of novel robot designs.
  - Worked with a team to design a patient interface based on client feedback.

Skills

Coding	Python • Matlab • ROS • LaTeX • C++
Software	Solidworks • Gazebo • Comsol • LabVIEW • RViz
Machining	TIG Welding (Steel, Aluminum & Titanium) • Milling • Latheing • Casting • CNC Machining
Prototyping	FDM • Multi-Material 3D Printing • Laser Cutting • Silicone Molding • Polyurethane Casting
Misc.	Concert Level Jazz Saxophonist • Street Performer • Expert Skier • Charter Boat Fishing Captain • Tufts Admissions Tour Guide