

EDUCATION

Massachusetts Institute of Technology

Class of 2018

Candidate for B.S. in Mechanical Engineering with Conc. in Product Development (Course 2-A)

Select Coursework: Product Engineering, Design and Manufacturing, Robotics, Engineering Leadership, Statics and Materials, Dynamics, Thermal-Fluids, Measurement and Instrumentation, Applied Electronics, Numerical Computation, Japanese 4

INDUSTRY AND PROJECT EXPERIENCE

- Coordinate** (Search and Rescue) Product Design Fall 2017
- ❑ Delivered alpha prototype GPS system of 10 total devices (3 unique designs) from idea to build within 6 weeks, after 3 rapid iterations of plastic and rubber enclosures, as a leading designer in a product team of 18 students;
 - ❑ Drove electronics integration: delivered battery packs and compartments for AAs, 18650s, surface charging, multi-input, and non-reversible features, designed button and screen interfaces, PCB and antenna assembly;
 - ❑ Owned waterproofing design, IP67 (pending), through custom gaskets and liquid adhesives;
 - ❑ Supported manufacturing: created toolpaths for CNC milling in HSMWorks and rubber molding processes;
 - ❑ Presented on behalf of team at product launch to over 250,000 unique viewers and 1100 live
- Assistive Robot Arm** Mechanical Design
- ❑ Delivered serial elastic actuated robot to safely help hemiplegic patients with household tasks;
 - ❑ Owned design of arm linkage: aluminum structure, thrust and ball bearing joints, and belt power transmission
- Aqualens** Founder & Team Lead January 2018 - Current
- ❑ Integrating 12 engineers on technical, product, business, and process aspects to develop swimming technology that improves swimmer to coach communication and provides fitness analytics;
 - ❑ Driving mechanical design of a small form factor fitness wearable and IP68 (pending) device
- Aperia Technologies** Product Manager Intern Summer 2017
- ❑ Owned pneumatic, electrical, and mechanical systems design of a mobile testing and prototyping bench with an uninterruptible 2 hour battery life (300 Wh) and air storage (10 gal.);
 - ❑ Integrated pneumatic regulators and sensors (0-200 psi), UPS and battery, 110V AC to DC power, drawers;
 - ❑ Supported PRD creation for second gen automatic tire inflator system at a rapidly growing startup;
- MIT Soft Robotics Lab** Researcher January 2018 - Current
- ❑ Driving design, build, and test of a novel entirely rubber 3 DOF fluidic robot arm as a safe manipulator;
 - ❑ Owning FEA to optimize deformation, lost-wax casting, working with prototyping vendors;
 - ❑ Overseeing sophomore researcher and providing design and manufacturing mentorship
- Vecna** Robotics MechE Intern Winter 2017
- ❑ Proved concept and validated failure mode cycle lifespan of a novel hydraulic actuator (1,200 psi) through implementation of a test rig for a DARPA funded robot arm project;
 - ❑ Repaired and validated performance through failure mode cycle testing of a lifting robot
- Draper** Vehicle Intern Summer 2016
- ❑ Owned chassis structure and electronics mounting design for a novel autonomous mobility scooter;
 - ❑ Designed for manufacturing and created technical drawings of 15+ mounts and parts;
 - ❑ Researched path planning algorithms (RRT, A*, POMDP, Dijkstra) to investigate efficiency and safety

LEADERSHIP & ACTIVITIES

- MIT Phi Kappa Theta** President (Ex- VP, Treasurer)
- Spearheading growth: increased brother residency from 83% to 94%; drove \$70,000 in renovations in 1 year and gathered funding (75% grants); increased summer tenancy income by 22% (\$11,000) in 1 year
- MakeMIT (TechX) Organizer**
- Coordinated hardware hackathon; individually secured \$12,000 worth of corporate funding and materials
- MIT (GEL) Program Student**
- Learned engineering industry leadership theory through team simulations and class instruction
- FIRST Robotics 6112 Team Lead**
- Achieved first place in state and led engineering and business efforts for a competitive robotics team;

TECHNICAL SKILLS

CAD & CAM | Solidworks w/ Simulation (FEA), HSMWorks, MasterCAM, Tooling Design, Rendering

Manufacturing | CNC Machining, Lathe, Mill, Injection Molding, 3D Printing, Rubber Molding, Investment Casting

Programming & Electronics | MATLAB, HTML & CSS, Arduino & Rapid Prototyping, Oscilloscope