Mindy Tieu

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EDUCATION

Olin College of Engineering, *Needham MA* — *May 2017*

Bachelor of Science, Mechanical Engineering — *GPA 3.54*

- Olin College Half Tuition Scholarship Recipient 2013 - 2017.

Sophia University, *Tokyo, Japan* — *Sep 2015 – Jan 2016*

Study Abroad Semester, Concentration in Japanese Language and Culture

- American Association of Teachers of Japanese Bridging Scholarship Recipient 2015.

Montgomery High School, *Skillman NJ* — *May 2013*

- Varsity Fencing Team Captain 2012-2013. Varsity Fencing 2011-2013.

EXPERIENCE

Amazon Robotics — Needham, MA

Senior Capstone — Sep 2016 - Present

- Member of 6-person team of seniors working on year-long proof of concept project sponsored by Amazon Robotics.
- Designing and building pick and place system to robustly sense and manipulate variable objects in warehouse setting.
- Designing and prototyping electro-mechanical subsystems for variable object handling.

Massachusetts General Hospital — Boston, MA

Student Researcher — *Mar 2017 - Present*

- Designing and prototyping low cost imaging system for early detection and diagnosis of sepsis by physicians at MGH.
- Configuring system requirements for microscopy of human neutrophil migration patterns using microfluidic device.

Superpedestrian — Cambridge, MA

Mechanical Engineering Intern — *May 2016 - Aug 2016*

- Architected, executed, and documented mechanical design validation plan for full product assembly before ship to customers.
- Investigated grease application method and did system level analysis of sound pressure and drag forces in final product.
- Designed and fabricated test structures for extreme environmental conditions and representative dynamic forces.

Olin College of Engineering — Needham, MA

Course Assistant — *Sep 2015 - Dec 2016*

- Guided students through mechanical design processes, CAD modeling, and rapid prototyping for Design Nature course.
- Tutored students in mechanical dynamics and assisted professors in course design for Quantitative Engineering Analysis course.

Biomedical Research Engineer — *Jun 2015 - Aug 2015*

- Conducted FEA for validation of orthodontic pacifier designs accounting for nonlinear properties and dynamic elements.

Mechanical Design Research Engineer — *Jun 2015 - Aug 2015*

- Massachusetts Space Grant Recipient for research into UAV VTOL research.
- Designed, fabricated, and tested gravity actuated perching landing gear for implementation on unmanned aerial vehicles.

Olin Intelligent Vehicles Lab — Needham, MA

Autonomous Drones for Whale Research Engineer — *Sep 2014 - Dec 2014*

- Implemented autonomous quad-copter drones in whale research project “Snot Bot” with Ocean Alliance.
- Field tested and acquired data from drone and whale interaction simulations.

Robot X Research Engineer — *Jan 2014 - May 2014*

- Designed and fabricated sensor mounts on Robot X, an intelligent maritime vehicle shared by Olin and MIT.
- Developed advanced composite fabrication skills for marine applications though CAD modeling and machine shop use.

United States Fencing Association — Maplewood, NJ

Referee — *Sep 2011 - Mar 2013*

- Referee at interscholastic and USFA rated events around PA, NJ, and NY tristate area.
- Inspected equipment, awarded points, imposed penalties, and served on bout committees to run tournaments and determine results.

PUBLICATIONS

Autonomous Aerial Vehicles for Remote Sample Collection in Difficult Conditions

- Paper published to IEEE International Conference on Technologies for Practical Robot Applications, 11-12 May 2015, Woburn, MA.
- Poster presented at Northeast Robotics Colloquium, 11 Sept 2014, Brown University, RI.

Demonstrations of Bio-Inspired Perching Landing Gear for UAVs

- Paper published to SPIE Smart Materials Conference on Bioinspiration, Biomemetics, and Bioreplication VI in Nevada March 2016.

PROJECTS

Think Inside the Box — Fall 2016

- Developed and built space-themed, immersive gaming environment demonstrated live for 2 hours at Olin Exposition.

Image Processing — Spring 2016

- Implemented Mumford and Shah mathematical image processing model in MATLAB to denoise and inpaint corrupted images.

Gold Colloid Design and Synthesis — Spring 2016

- Explored gold colloid synthesis methods to vary nanoparticle diameter, silica shell thickness, and macroscopic optical properties.

Kinetic Sculpture Simulation — Fall 2014

- Modeled kinetic sculpture "Thor's Hammers," simplified into a planar quintuple pendulum with offset center of masses, in MATLAB and simulated dynamics varying initial forces, angles, and masses.

Under-actuated Mechanical Hand — Spring 2014

- Designed and fabricated under-actuated mechanical hand, focusing on transmission and power system, to grasp objects including a basketball, water bottle, and ice cube.

COURSES

Engineering: Modeling and Simulation, Modeling and Control, Design Nature, Real World Measurements, Mechanics, Mechanical Prototyping, Dynamics, Fundamentals of Robotics, User Oriented Collaborative Design, Mechanics of Solids and Structures, Thermodynamics, Principles of Engineering, Transport Phenomena, Systems, Biomedical Device Design

Mathematics: Linearity I, Linearity II, Discrete Mathematics, Probability and Statistics, Partial Differential Equations

Science: Principles of Modern Biology, Materials Science and Solid State Chemistry

Humanities: Venture Management , Japanese I, Japanese II, Japanese M1, Survey of Japanese Art History, The Digital Eye: Photography, Vision, and Visual Communication, Cosplay Design and Fabrication

SKILLS

Experienced in: SolidWorks, SolidCAM, FEA, MATLAB, LabVIEW, HTML, CSS, LaTeX, Photoshop, InDesign

Trained on: Manual/CNC Mill, CNC Router, Lathe, Horizontal/Vertical Band Saws, Drill Press, Panel Saw, Laser Cutter, Composites, 3D Printers, Environmental Chambers

Interests: Videogames, running, fencing, costume design and fabrication

Languages: Cantonese, Japanese, Russian