Rebecca Shen

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EDUCATION

TUFTS UNIVERSITY

Bachelor of Science in Mechanical Engineering & Biomedical Engineering G.P.A 3.77, Dean's List

> Relevant Courses: Electromechanical Systems & Robotics; Intro to Robotics and Mechanics; Engineering Design; Materials and Manufacturing; Mechanics; Thermal Fluid Systems; Differential Equations; Linear Algebra; Probability & Statistics; Design of Medical Instrumentation- Fall 2021: Digital Controls & Dynamic Systems; Robotics; Biomaterials

SHANGHAI AMERICAN SCHOOL (SAS)

Shanghai, China G.P.A 3.86, Magna Cum Laude, National Merit Commended Student, AP Scholar with Distinction

EXPERIENCE

FUTURE EDUCATIONAL TECHNOLOGY LAB, TUFTS UNIVERSITY

Undergraduate Researcher, Research Intern (Summer 2021)

- Construct and program a hedgehog robot to follow scent for a wildlife conservation game
- Utilize Microsoft Azure IoT/ML platform to train hedgehog's artificial nose
- Designed LEGO robotic systems integrated and controlled with IoT, AI, and data analytics
- Trained systems using JavaScript, Python, and advanced ML algorithms through PTC's IoT platform ThingWorx and TensorFlow
- Expanded SPIKE Prime robot functionalities by developing WiFi communication interfaces with REST API and MQTT

TUFTS UNIVERSITY MECHANICAL ENGINEERING DEPARTMENT

Course Assistant for Mechanics I

- Graded assignments, held weekly office hours, debugged and tested Arduino/MATLAB labs for engineering students
 - Participated in a weekly pedagogy seminar to discuss and enhance diversity and inclusion in engineering courses

TUFTS CENTER FOR ENGINEERING OUTREACH AND EDUCATION

Engineering Education Intern

- Aided curriculum development for Mechanics I & II with professors to incorporate hands-on modeling and simulation tools
- Created 14 supplementary video and MATLAB script modules for statics, dynamics, and mechanics of materials
- Simulated a kinetic sculpture mechanism and validated results with SolidWorks and Logger Pro video analysis

TUFTS CENTER FOR ENGINEERING OUTREACH AND EDUCATION

STOMP (Student Teacher Outreach Mentorship Program) Fellow

Developed and taught weekly lessons aimed to implement STEM education in local elementary schools

Introduced engineering design process to students using Lego Robotics and Scratch coding

Resident (Fall 2018)

- Mentored small groups of K-6 students while assisting weekend engineering workshops
- Coordinated with residents to plan and lead a 25-student workshop that explored real-life engineering problems

PROJECTS

ADORE-SAT CUBE SATELLITE (TUFTS),

Communications Subsystem Co-Lead, Students for the Exploration and Development of Space (SEDS)

- Develop nanosatellite using MIT electrospray thrusters as part of Boston Space Alliance (Tufts, MIT, Northeastern)
- Strategize with subsystem to establish radio communications, secure a ground station, and calculate link margin

SKILLS

SOFTWARE: Java, JavaScript, Python, MicroPython, R, C++, MATLAB, SolidWorks, ThingWorx, Microsoft Azure, COMSOL, KiCad, LabVIEW, HTML

HARDWARE: Arduino, Raspberry Pi, LEGO Robotics, 3D Printing, Laser Cutting, Milling, Soldering OTHER: FCC Technician License for Amateur Radio, Mandarin, Piano (14 years), Violin (8 years)

September 2018 – December 2019 Medford, MA

June 2021 – Present Medford, MA

Expected May 2022

Medford, MA

May 2018

September – December 2021

Medford. MA

June – August 2020

Medford, MA

January 2019 – Present