Rebecca Shen

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EDUCATION

TUFTS UNIVERSITY — *Expected May 2022*
Bachelor of Science in Mechanical Engineering — *Medford, MA*
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– *Fall 2021:* Digital Controls & Dynamic Systems; Robotics

SHANGHAI AMERICAN SCHOOL (SAS) — *May 2018*
G.P.A 3.86, Magna Cum Laude, National Merit Commended Student, AP Scholar with Distinction — *Shanghai, China*

WORK EXPERIENCE

FUTURE EDUCATIONAL TECHNOLOGY LAB, TUFTS UNIVERSITY — *June – August 2021*
Research Intern — *Medford, MA*

- Designed LEGO robotic systems integrated with IoT, AI, and data analytics
- Trained systems using JavaScript, Python, and advanced ML algorithms using PTC's industrial 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 — *September – December 2021*
Course Assistant for Mechanics I — *Medford, MA*

- Graded assignments, held weekly office hours, advised and supported 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 — *June – August 2020*
Engineering Education Intern — *Medford, MA*

- 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 — *September 2018 – December 2019*
STOMP (Student Teacher Outreach Mentorship Program) Fellow — *Medford, MA*

- 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) — *January 2019 – Present*
Communications/Ground Station Subsystem Co-Lead
Students for the Exploration and Development of Space (SEDS) Member

- 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, MicroPython, Python, R, C++, MATLAB, SolidWorks, 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)