

Rose Kitz

(860) 324-9077 | Rose.Kitz@Tufts.edu | r-kitz.github.io

EDUCATION

Tufts University, Medford, MA

Candidate for Bachelor of Science in Mechanical Engineering with a minor in Music Engineering

May 2024

GPA 3.88, Dean's List all semesters

Activities: Varsity XC/T&F (Captain '23-24, Green Dot and SAAC Rep, NESCAC All-Sportsmanship '23 & '21); Tufts ME ABET Constituency Review Committee; Soc. Women Eng. (Exec. Board 3 years); American Soc. Mech. Eng., Tufts Bike Shop

Relevant Courses: [Robotics](#), Controls, Elec. Musical Ins. Design, Ortho-Biomechanics, [Simple Robotics](#); Comp. Sci.; Human Factors Eng.; Mechanics; Materials & Mfg.; Eng. Design; Design Thinking Social Change; Arch. Acoustics; Public Speaking

University of Pavia; Pavia, Lombardy, Italy; *Tufts-In-Pavia Data Science & Italian Program*

July 2022

TECHNICAL EXPERIENCE

Systems Test Engineering Intern

May - Aug. 2023

iRobot (Bedford, MA)

- Designed, built, developed and verified new product test fixtures utilizing inter-competency system level thinking (Mechanical/Electrical Design, Controls, Data Collection & Analysis)
- Supported the development of advanced technologies, from their infancy to production
- Tested and debugged prototype robotic systems composed of wireless communication systems, sensors, computation modules, mobility, and power/energy storage subsystems
- Assisted in prototype integration, verification, and validation, inc. system functional, performance & environmental testing

Fabrication Specialist

Sep. 2022 – Present

Nolop FAST Facility (Makerspace) at Tufts University

- Welcome and train community members to use tools safely & effectively; provide advice in the iterative design process
- Maintain & repair tools, take initiative to clean & organize the space, track inventory and facilitate store purchases
- Plan & run two workshops per semester (stained glass, soldering) to invite new students/faculty/staff into the community

RESEARCH EXPERIENCE

Future Educational Technologies Lab Intern

Jul. – Aug. 2022

Tufts Center for Engineering Education and Outreach, supervised by Chris Rogers

- Researched, programmed, tested, and documented methods for playing MIDI sounds over BLE & USB on the SPIKE Prime hub with MicroPython, enabling students to build wireless, sensor-driven musical instruments with GarageBand
- Designed, built, and programmed a SPIKE trombone (with 'real' partials & slide positions), as well as [other instruments](#)

STEM Education Research Assistant

Feb. – May 2022

Tufts Center for Engineering Education and Outreach

- Tested new VR software, MindRender; designed a mini-golf lesson with MR's physics engine
- Integrated environmental sensors with Arduino/micro:bit to design garden maintenance activities for HS program

STEM TEACHING EXPERIENCE

Learning Assistant, Electronics & Controls, Tufts University Department of Mech. Eng.

Sep. – Dec. 2023

Teaching Assistant, Robotics, Tufts University Department of Mech. Eng.

Sep. – Dec. 2023

Teaching Assistant, Intro to Computing for Engineers, Tufts University School of Engineering

Jan. – May 2022

Teaching Assistant, Intro to Engineering: Simple Robotics, Tufts University Department of Computer Science

Sep. – Dec. 2021

Engineering Instructor (Elevating Agriculture Tech.), Boston Design Academy (Timothy Smith Network)

May – Sep. 2021

- Designed curriculum integrating micro:bit/Arduino, design thinking, and sustainable agriculture/indoor gardens
- Led electronics and food justice lessons, supporting 20 students and fellow instructors in virtual classroom 4 days/week

SKILLS

Fabrication: LEGO SPIKE Prime; bike repair; laser cutting, 3D printing, metalworking, water jet, woodworking, design thinking

Programming: Python (PyGame, NumPy, Matplotlib, Pandas), MicroPython, MATLAB, R, HTML/CSS, JavaScript, Arduino, Java

SW: Creo, SOLIDWORKS (FEA), OnShape; KiCad; Comsol (CFD); Adobe; OpenSim, Max, Reason, CATT Acoustic, GarageBand

Electronics: MIDI BLE, Raspberry Pi, image processing, soldering, micro:bit, Arduino, soft circuits, garden maintenance systems

Communication: Jira, Confluence, Proficient Spanish, Conversational Italian; Graphic Design, Jazz Music ([big band](#), improv.)