# Ririko ("Liliko") Uchida

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## EDUCATION

***Tufts University*** 2019 – 2023

Bachelor of Science Mechanical Engineering (BSME), Bachelor of Science Physics

**Major GPA (Mechanical Engineering):** 3.77 / 4.00

**Major GPA (Physics):** 3.88 / 4.00

**Relevant courses:** Materials, Statics, Dynamics, Power Generation Systems, Engineering Design, Robotics, System Controls, Intro Python, Manufacturing, Thermodynamics, Optics & Waves, Intro Modern Physics, Biomaterials, Engineering Leadership

## EXPERIENCE

***Student Accessibility & Academic Resources*** / *Subject Tutor* 09/2022 – present

- Conduct one-on-one and group tutoring sessions to university students in physics and mathematics
- Serve as an accessibility and academics representative within the Tufts University community
- Facilitate and lead campus academic resource events while building rapport with and providing support to peers

***SharkNinja*** / *Noise & Vibrations Engineer Intern* 06/2022 – 08/2022

- Rapid-prototyped product geometries for noise metric optimization in new products using SOLIDWORKS
- Conducted noise studies using Simcenter TestLab
- Utilized LTspice to rapidly iterate electroacoustic systems with lumped-element modeling for a proof-of-concept prototype

***Guasto Lab*** / *Undergraduate Researcher* 02/2021 – 08/2021

- Designed and fabricated current amplifier prototypes
- Performed impedance analysis on coil resistors
- Fabricated microfluidic channels and sub-cultured magnetotactic bacteria

***Zemax*** / *Physics Intern* 01/2021 – 05/2021

- Co-authored a cohesive training curriculum on the Fundamentals of Optical Design
- Condensed complex technical information into comprehensible visual demonstrations, narratives, and interactive checkpoints
- Collaborated with a small team of professionals to optimize efficiency in achieving our goal

## PROJECTS

**Spotify Audio Analytic Analysis**

- Coded a Python program which utilizes last.fm/music and Spotify APIs to collect data on recently listened-to tracks
- Programmed a mean-shift clustering algorithm from scratch to group tracks based on similar analytics

**Roll Forge Analysis**

- Analyzed a hypothetical roll forge given specified parameters including deflection, fatigue and static failure, factor of safety, and gear analysis
- Determined a factor of safety and conclude the efficiency of the design
- Proposed design improvements based on findings

**Design for Deflection**

- Modeled a C-shape beam design to be made of AI6061-T6511 and withstand 200 lbf with 0.5" deflection
- Performed FEA analysis on the model and compare results to Castigliano's calculations
- Tested true deflection and yielding with static load Instron equipment

## EXTRACURRICULARS / LEADERSHIP

**American Society Mechanical Engineers (ASME)**

- External relations chair of the Tufts ASME chapter
- Expand Tufts' chapter network to outside engineering
- Graphic designer for advertising chapter events

**Sigma Pi Sigma, Physics Honors Society**

- SPS scholar in the Tufts University chapter

## SKILLS

**Languages & Programs:** Python, MATLAB, SOLIDWORKS, LabVIEW, Arduino, Comsol, LaTex, LTSpice, Simcenter TestLab

**Mechanical Engineering:** 3D printing, Laser Cutting, Circuit Boards, PCB, Prototyping, Static/Fatigue Failure Analysis, Finite Element Analysis, Design, Data Analysis, Product Development, Instron Testing

**Web Development:** HTML5

**Graphics, Documentation, & Editing:** Adobe Illustrator, Microsoft PowerPoint, Microsoft Excel