

Elizabeth Mountz

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OBJECTIVE

To gain an internship in transducer and integrated circuits development for sensing/signal processing applications.

EXPERIENCE

ANALOG IC DESIGN

Pittsburgh, PA

Course Project

8/23 – 12/23

- Designed a 3-stage transimpedance amplifier schematic with ~300k gain in Cadence Virtuoso
 - Validated robust performance by simulating and making adjustments for 0-100° C temperature range
 - Leveraged the strengths of different amplifier topologies to achieve 135MHz bandwidth despite additional capacitive loading
 - Analyzed analog IC design trade-offs to engineer less than 400 μ W power demand without sacrificing performance requirements
- Designed schematic and layout for differential amplifier
 - Iterated on design to achieve 86.8% yield with process variation assessed using Monte Carlo Analysis and -100 to 100 mV common mode input voltage
 - Tuned a compensation subcircuit for 100MHz Unity Gain Frequency with >70 degrees phase margin
 - Optimized design trade-offs for less than 500 μ W power demand and 1V peak-to-peak output

MICROELECTROMECHANICAL SYSTEMS (MEMS) DESIGN

Pittsburgh, PA

Course Project

8/23 – 12/23

- Designed and simulated low-frequency piezo-electric energy harvester in COMSOL Multiphysics
- Refined transducer design to achieve 1.65nA output at about 1.5Hz
- Proposed fabrication process for device based on industry standards

HEBI ROBOTICS

Pittsburgh, PA

Electrical Engineering Intern

5/23 – 8/23

- Designed schematic and PCB layout in Altium for internal development use including:
 - 4-channel Ethernet/optical fiber switch
 - 160W Eload with active cooling, on-board current/voltage sensing, and thermal regulation
 - 4-channel brushed DC motor driver with motor coil current sensing
 - Soft-start power switch with reverse and overcurrent protection

SKYDIO

San Francisco, CA

Electrical Engineering Intern

5/22 – 12/22

- Designed schematic and 6-layer PCB in Cadence PCB Suite for two iterations of a product, and one iteration of a test fixture board
- Collaborated with product development team to meet size constraints of the form-factor and with the system integration team for final component testing and selection
- Worked closely with firmware team on STM32 MCU selection, integration in design, and firmware bring-up
- Developed test board design within the framework of a test rig which had to be intuitive to program, to track firmware revisions, to start/stop, and to swap devices under test

EDUCATION

CARNEGIE MELLON UNIVERSITY

Pittsburgh, PA

Master of Electrical Engineering

12/24

- AFFILIATIONS: Micro and Nano Systems Laboratory, Integrated Circuits and Bioengineering Lab, Biorobotics Lab
- INTERESTS: Carnegie Mellon University Small Ensemble (Oboist)

UNIVERSITY OF PITTSBURGH

Pittsburgh, PA

Bachelor of Science in Bioengineering

5/22

- AWARDS: 4th Place Big Idea Competition (2022), Journal of Alzheimer's Disease Publication (PMID: 37638440)