

EDUCATION

Rice University

Bachelor of Science in Electrical Engineering

Houston, TX
(Planned) May 2024

RELEVANT COURSEWORK

Algorithmic Thinking (COMP 182)	Program Design (COMP 215)	Parallel Programming (COMP 322)
Signals, Systems, and Learning (ELEC 301)	Random Signals (ELEC 303)	Digital Systems (ELEC 327)
Computer Vision (COMP 447)	Neuroengineering (ELEC 380)	Theoretical Neuroscience (ELEC 488)

WORK AND RESEARCH EXPERIENCE

Neuronal Connectivity Inference

May 2022 – Present

Rice University Neuroengineering Initiative

Advisors: Dr. Joe Young and Dr. Behnaam Aazhang

This project seeks to use information-theoretic techniques to identify the functional connectivity of neurons from voltage-sensitive dye (VSD) data.

- Upgraded existing codebases from TensorFlow 1 to TensorFlow 2
- Optimized Python code with multiprocessing
- Helped build a server to run code for the group
- Ran several simulations to find the optimal parameters for [graphical directed information \(GDI\)](#)
- Collaborated extensively with neurobiology faculty at UTHealth

HealthSeers

May 2023 – August 2023

Firmware Engineer

The Cairdio team at HealthSeers is designing a 4-track electronic stethoscope to perform diagnostic phonocardiography (PCG) for preventative cardiovascular health management.

- Designed PCBs with microcontrollers, mixed signal processing, and power delivery
- Wrote firmware for the Nordic nRF5340 SOC
- Implemented high-speed analog-to-digital recording of stethoscope audio
- Optimized Bluetooth transmission of recorded heartbeats to an Android and iOS app – improved transmission speed by 48x
- Gained familiarity with devicetree, ARM, and the Zephyr RTOS
- Wrote extensive documentation and managed the code repository and project management software

Acral Melanoma Classification Pipeline

June 2021 – June 2022

Rice University Department of Computer Science

Advisor: Dr. Devika Subramanian

This project sought to create a tool that can identify acral melanoma from noninvasive imaging.

- Constructed a CNN pipeline with PyTorch
- Corresponded with MD Anderson dermatologists to acquire image data
- Worked with others in a Google Colab environment and used virtual GPUs to improve training time

VOLUNTEER EXPERIENCE

Child Advocate

May 2023 – Present

- Completed Advocacy University
- Assigned to advocate for a child involved in a CPS case in May 2023
- Communicated and visited with CPS, physicians, family members, lawyers, etc. to recommend a course of action for the presiding court
- Visited the child multiple times every month

- Testified in court to provide a detailed summary and recommendations for the ongoing process
- Researched criminal records for several other cases

TECHNICAL SKILLS

Programming Languages: Python (PyTorch, TensorFlow, Pandas, etc.), Java, C, MATLAB, \LaTeX , Verilog

Software: EAGLE, Fusion360, Altium Designer, KiCad, LTSpice, Wolfram Mathematica, Git, Zephyr RTOS