Matthew **Yu**

2501 Cima Hill Dr., Plano, TX 75025

972-210-1357 | matthewjkyu@gmail.com | dimembermatt.github.io

github.com/dimembermatt | linkedin.com/in/matthew-yu-126331144/

Education

The University of Texas at Austin *May 2021*

B.S. in Electrical and Computer Engineering

- Cumulative GPA: 3.34
- Coursework: Intro to Embedded Systems, Software Design and Implementation I, Circuit Theory, Dev. of a Solar Powered Vehicle, Digital Logic Design, Computer Architecture, Software Design and Implementation II

Projects

Image Generation - C++ *January 2019 - Present*

- Built an application using OpenFrameworks that creates art based on Markov Chains generated from image sets.
- Developed a median cut algorithm implementation for color quantization.

Audio Visualizer - Javascript, HTML, CSS dimembermatt.github.io/Web-Audio-Visualizer *Summer 2018*

- Co-programmed an mp3 audio visualizer that uses the P5JS and WebAudio API to load songs from the local file system and depict various visuals based off the rhythm.
- Worked on creating the initial design, as well as wrote the working prototype of the visualizer using a particle system.

Intro to Embedded Systems Final Project - C, Python *May 2018 - Present*

- Led the programming and wrote up the design and circuit implementation of the TivaBoy, an embedded system game controller using the TI Tiva microcontroller.
- Wrote a game implementing the battling feature of Pokémon against a CPU.
- Rework an idea using Python and OpenCV to transcribe sheet music into a decodable file format that plays on MusicBox, a program that plays tunes from the TivaBoy.

How Things Work Pet Feeder Project - Arduino, SOLIDWORKS *May 2018*

- Led the programming of the Arduino UNO microcontroller and the electronic component interfacing.
- Used SOLIDWORKS to create the initial pet feeder design and contributed to the iterative design process for customer needs.

Degree Planner and Audit Program - C *January 2018*

- Created a program that allows the user to read and populate text files with official coursework and planned coursework as well as check the GPA and rate of progress to diploma (ECE only). Users can add, remove, and edit courses.

Extracurricular Activities

Longhorn Racing - UT Solar Vehicle Team *Fall 2018 - Present*

Member, Solar Array Lead (2019)

- Lead the assembly of solar cells into modules for lamination and application onto BeVolt.
- Developed milling, laminating, and SMD soldering skills.
- Helped build the lamination and testing setup for solar cells and modules.

IEEE Robotics and Automation Society *Fall 2017 - Present*

Member, Leader, Historian and Junior Webmaster (Spring 2019)

- Region V (Fall 2017 - Present)
  - Participated in the mechanical design and assembly for the 2017-2018 robot.
  - Lead the DBSCAN and simulator groups for the computer vision stack of the 2018-2019 robot.
- Micromouse (Present) - Lead the maze-solving algorithm development and integration with the Micromouse.
- Robotathon (Fall 2017, 2018)
  - RASCar 2017 - Led the mechanical fabrication and design of the group's 2nd RASCar robot, "Picobot".
  - RASumo 2018 - Wrote sensor interfacing tutorials and helped host the competition as the DJ and streamer.

American Society of Mechanical Engineers *Fall 2017 - Present*

Member

- Rube Goldberg/Design Team (Fall 2017 - Present) - Designing multistep processes for STEM education and competition.
  - Rube Goldberg National Competition (2018) - 6th place.
  - Helped design, construct, and setup a Rube Goldberg Machine for an advertising commercial by energy company Reliant.

Skills

Programming Languages C/C++, Java, Python 3, Arm Thumb2 ASM, JavaScript

Markup Languages HTML (and CSS), XML, Markdown, LaTeX (TeX)

General Skills Microsoft Office, Google Suite, SOLIDWORKS, Git, Github, Linux OS

Technical Skills SMD Soldering, Milling, Lathing, Laser Cutting, 3D Printing