Matthew Yu

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UNDERGRADUATE | MAY 2021 | UNIVERSITY OF TEXAS AT AUSTIN – COCKRELL SCHOOL OF ENGINEERING

· B.S. in Electrical and Computer Engineering
· Cumulative GPA: 3.22

Related Coursework

INTRO TO EMBEDDED SYSTEMS, SOFTWARE DESIGN AND IMPLEMENTATION I, CIRCUIT THEORY, DEV. OF A SOLAR POWERED VEHICLE

Projects

Dev. of a Solar Powered Vehicle - Solar Array Fabrication **Fall 2018**

- Developing milling and soldering skills in the creation of testing environments and production equipment.
- Fabricating solar arrays and testing them for cell efficiencies and flaws.
- Learning lamination processes for coating of solar cells for application onto the solar vehicle.

Generative Art – HTML, Javascript **Summer 2018**

- Using the P5JS API, I created a series of programs that create generative art based on a set of rules or are emulative of natural phenomenon. These works and descriptions can be found at https://dimembermatt.github.io/projects.

Audio Visualizer – HTML, CSS, Javascript **Summer 2018**

- Co-programmer on an mp3 audio visualizer that uses the P5JS and WebAudio API. Worked on creating the initial design, as well as wrote the working prototype of the visualizer using a particle system. This visualizer can load songs from the local file system and display several variations of a visualization based off the music.

Personal Website – HTML, CSS, Javascript **May 2018 - Current**

- Designed and wrote several iterations of a personal website. Currently on version 3, focusing on minimalist design and better readability and modularity.

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

- 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 *Pokemon* against a rudimentary CPU.

How Things Work - Pet Feeder Project **May 2018**

- Led the programming of the Arduino UNO microcontroller and the electronic component interfacing; CADded the initial iteration of the pet feeder design and provided input on the development of the design for customer needs and technical problem solving.

HelloTree - C **March 2018**

- A game where the user attempts to grow a tree while responding to events and choices that impact its growth. The program uses populated text files, by implementing a pointer array to locate and read information. The information is parsed to obtain event flavor text, choices, and effects.

Degree Planner and Audit Program – C **January 2018**

- 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.

Intro to Electrical Engineering Final Project **November 2017**

- Led the fabrication of a robot car and its circuit design as well as helped debug the robot during testing to navigate a rudimentary obstacle course.

Service and Extracurricular

Institute of Electrical and Electronics Engineers **2017-Current**

- Participation in Robotathon and IEEE RAS committee Region V and PacBot, engaging in design, CAD modeling, mechanical testing, and assembly of robots. Led the mechanical design for the Robotathon RASCar robot, “Picobot”.
- Region V - 10th place out of 30 during the IEEE 2018 conference
- PacBot competition hosted by the Harvard Undergraduate Robotics Club – 3rd place
- Robotathon - Undefeated Champions in Competition, 2nd Place in overall points.
- Volunteered to build LEGO fields at ARM for the First LEGO League Hydro Dynamics challenge, and as a judge for the 2018 Capital Area Divisional STEM Competition.

American Society of Mechanical Engineers **2017-Current**

- Participating in ASME’s Rube Goldberg club, and helping design and create multistep processes for presentation at the Rube Goldberg 2018 competition and for local education initiatives to generate interest in STEM fields.

- Rube Goldberg National Competition – 6th place
- Volunteered at Cockrell Con to showcase Rube Goldberg Club's machine.
- Helped design, construct, and setup a Rube Goldberg Machine for an advertising commercial by energy company Reliant

Technologies/Proficiencies

- Programming Languages: C, C++ (Arduino), Java, Arm Thumb2 assembly, Python 3, Javascript (Frameworks and Libraries: Webaudio, P5JS), HTML and CSS, XML
- Microsoft Word, Excel, PowerPoint, Google Drive, Git, Github
- Machine shop milling and lathing, laser cutting, 3D printing, SOLIDWORKS