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

EE302 (INTRO TO ELECTRICAL), EE306 (INTRO TO COMPUTING), EE319K (INTRO TO EMBEDDED), UGS303 (HOW THINGS WORK)

Projects

Audio Visualizer – HTML, CSS, Javascript   **June 2018 - Current**
- 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 initial proof of concept using the P5 Audio Library.
- Currently developing a framework to display visualizations using the P5 Particles Library.

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.

EE319K Final Project – C, Python   **May 2018 - Current**
- 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.
- Currently working on using Python and OpenCV to transcribe sheet music into a decodable file format that play on MusicBox, a program that plays tunes from the *TivaBoy*.

UGS303 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.

DeLight - C++, Ruby   **April 2018**
- DeLight is a smart light system that takes in sensor input from embedded ultrasonic sensors to detect activity in the room. It turns off/on the light and data is sent to Firebase, which can send data to a mobile application to display trends and energy usage.
- Worked on the circuit interfacing and programming of an Arduino Uno to the sensors for the system prototype and assisted debugging between communication of the hardware and the server from the wifi module.

HelloTree - C   **March 2018**
- A C application where the user attempts to grow a tree while responding to events and choices that impact its growth. The program uses populated text files to obtain event flavor text, choices, and effects by implementing a pointer array.

STEMulator – Java, XML   **February 2018**
- A mobile application created at HackUTD to educate children and students about STEM topics such as physics and engineering, as well as software and coding.

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.

War Game – LC3 Assembly   **December 2017**
- An assembly program that simulates the card game War. The user enters a seed and using a self-built pseudo random number generator, the program outputs a both a player and an opponent card and determines the winner.

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 in order to navigate a rudimentary obstacle course.

Service and Extracurricular

Institute of Electrical and Electronics Engineers   **2017-2018**
- 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.
- Volunteered as a judge for the 2018 Capital Area Divisional STEM Competition.

American Society of Mechanical Engineers   **2017-2018**
- 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

Mobile App Development (MAD)   **2018**
- Learning how to develop mobile applications on the Android platform using Android Studio.

Leadership
- Investment Club | Historian
- Literary Magazine | Editor
- Toastmasters | Vice President, Treasurer
- Junior State of America | Historian

Technologies/Proficiencies
- Programming Languages (in order of experience):
  - C, C++
  - Java
  - ARM Thumb2 assembly, LC-3 Assembly
  - Python3
  - Javascript (Frameworks and Libraries: WebAudio, P5JS)
  - HTML and CSS
  - XML
- Microsoft Word, Excel, PowerPoint, and Google Drive's respective equivalents, Git
- Machine shop milling and lathing, laser cutting, 3D printing, SOLIDWORKS