Matthew **Yu**

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Education

The University of Texas at Austin *May 2021*

B.S. in Electrical and Computer Engineering

- Cumulative GPA: 3.39
- Coursework: Algorithms, Circuit Theory, Dev. of a Solar Powered Vehicle, Digital Logic Design, Digital System Design Using HDL, Intro to Embedded Systems, Linear Signals and Systems, Rocket Engineering Practicum, Software Design and Implementation I and II

Work Experience

Cisco *Richardson, TX*

Software Engineering Intern *June 2019 - August 2019*

- Responsible for deploying the testing environment pipeline for integration testing.
- Create and manage automated and manual unit tests for CX workflows and user stories.
- Refactored back-end microservices to simplify application OAUTH2 authentication.
- Optimized application build process using prebuilt docker images, improving setup speeds by over 50%.

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.
- Optimized program structures and processes for efficiency improvements of over 90% in runtime.

Generative Art - C++, Javascript, HTML, CSS dimembermatt.github.io/Generative_Art *Summer 2018 - Present*

- Created a series of programs that create generative art using P5JS and OpenFrameworks.
- Used React to create a SPA to document work as part of an effort to better communicate code and algorithms to people.
- 1st place in the 2019 Images of Research competition with a piece based off of the Chirikov Standard Map (Chaos Theory).

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

- Led the firmware system design and circuit implementation of an embedded system game controller using the TI TM4C microcontroller.
- Programmed a game implementing the battling features of Pokémon against a CPU.

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.
- Assembled battery temperature probes for the battery protection system.

IEEE Robotics and Automation Society *Fall 2017 - Present*

Member, Leader, Historian and Webmaster (2019)

- Region V (Fall 2017 - Present)
  - Participated in the mechanical design and assembly for the 2017-2018 robot.
  - Led the DBSCAN and simulator groups for the computer vision stack of the 2018-2019 swarm robots.
  - Managed electromechanical assembly of the swarmbots, including PCB component soldering.
- Micromouse (Spring 2019 - Present)
  - Led the maze-solving algorithm development and integration with the Micromouse.
  - Created a standard interface between the hardware access layer and the algorithm.
  - Developed a simulator in C++ for algorithm testing.

American Society of Mechanical Engineers *Fall 2017 - Present*

Member

- Rube Goldberg/Design Team (Fall 2017 - Present) - Designing multistep processes for STEM education and competition.
  - 6th Place in the Rube Goldberg National Competition (2018).
  - 3rd Place in the Purdue National Chain Reaction Competition (2019).
  - Helped design, construct, and setup a Rube Goldberg Machine for an advertising commercial by energy company Reliant.

Skills

Programming Languages	C/C++, Java, JavaScript, Python 3, Matlab, Bash, Verilog, Arm Thumb2, LC3B
Libraries and APIs	ROS, OpenCV, OpenFrameworks, P5JS, NodeJS, Angular 6, ReactJS
Technical Skills	SMD Soldering, Milling, Lathing, Laser Cutting, 3D Printing
Software	Microsoft Office, Google Suite, Xilinx Vivado, Craftware, SOLIDWORKS, Git, Github, Linux OS