

Darren Au

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EDUCATION

University of Texas at Austin

2021-2025

BS Mechanical Engineering, Elements of Computing Certificate

Austin, TX

- Relevant Coursework: Elements of Software Design, Elements of Data Analytics
- GPA: 4.0/4.0

TECHNICAL EXPERIENCE

Human-Enabled Robotic Technology Lab

Austin, TX

Research Assistant

Aug 2021 – Present

- Conducted research under Dr. Ann Majewicz Fey to create an OpenCV script to measure the dimensions of a ring using a camera
- Implemented anti distortion calibration through checkerboard recognition
- Worked on a PID controlled Arduino pump to create a smooth inflation of rings

Texas Rocket Engineering Lab

Austin, TX

TVC Lead

Aug 2021 – Present

- Led team tasked with designing a gimbal for the engine to provide thrust vector control for the rocket
- Designed mapping algorithm convert desired angle to linear actuator movement of system
- Created Simulink model to map the angular acceleration command of rocket to angular acceleration command of the 3 fins control simulation.
- Programmed MATLAB script to perform a Monte Carlo simulation on the 6DOF simulation

PERSONAL PROJECTS

Personal Website

- Created a website to display all my personal projects
- Used JavaScript and React with tailwind CSS used for styling; hosted on AWS
- Can be found at: www.darrenau.com

First-year Introduction to Research in Engineering

- Applied machine learning techniques to study image progressing under Dr. Michael Cullinan
- Created algorithm with Python OpenCV to detect areas of high gradient intensity in AFM scans.
- Trained UNet convolutional neural network on custom dataset made with above algorithm to perform image segmentation on new images

Connect4

- Created Connect4 board game in Java with JavaFX for the UI
- Used alpha-beta pruning with an artificial scoring assignment to create the single player AI

Data Analytics Project Final

- Implemented scikit-learn to perform classification predictions on a dataset

SKILLS

- Proficient: Python, SolidWorks
- Experience With: MATLAB, Java, C++, Ansys, Excel