

## EDUCATION

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- University of Houston (Honors College)**      Houston, TX      May 2021
- **B. Sc.** in Electrical Engineering. GPA: 3.230
  - Minor: Leadership
  - Relevant Coursework: ECE 5388 Renewable Energy Technology, ECE 5377 Power Systems Analysis, ECE 3364 Circuits and Systems, ECE 3331 Programming Applications in ECE (ANSI C), ECE 4375 Automatic Control Systems, ECE 3355 Electronics, ENGI 1331 Computing for Engineers (MATLAB)

## PROJECTS

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- Smart Drip Irrigation System (Autodesk Inventor, TinkerCad, EasyEDA)**      *Fall 2020 - Spring 2021*
- Created an irrigation system, which will be able to irrigate any crop, for impoverished Nicaraguan farmers
  - 3D Designed and printed functional PCB using EasyEDA for the entire system's wiring
  - 3D Designed and printed Battery Platform and Protective Shield using Autodesk Inventor and TinkerCad
  - Lead power delivery system for the system, using solar panels and a charge controller to regulate current flow into the system

- Personal ePortfolioWebsite (HTML, CSS, JavaScript, GitHub)**      *February 2021 - May 2021*
- Programmed an ePortfolio website using HTML, CSS, and JavaScript. Using GitHub as a repository, the ePortfolio is fully interactive and functional in all devices

- State-Space Controller for Bicycle Stability (MATLAB, Simulink)**      *November 2020 - December 2020*
- Designed a controller for stabilizing a turning bicycle using MATLAB's state-space functionality
  - Coded physics analysis and checked for preliminary characteristics so that a controller could be designed using state-space analysis
  - Used Simulink to model block diagrams, and ran simulations to create an optimized controller for bicycle

- Two Signal Frequency Meter and Comparator**      *September 2019 - November 2019*
- Planned and constructed a circuit that produces a voltage output that is proportional to the frequency of an AC input signal with a range of 100 Hz to 10 kHz. The circuit has less than 1% error
  - Fabricated Transistor Charge Pump that uses discrete components for frequency to voltage conversion
  - Researched different types of circuits to develop the specific part that made a voltage that is proportional to the input signal's frequency

- Traffic Light Controller (ARM Assembly, Logic Gates, SimUaid)**      *April 2019, November 2019*
- Programmed a two-way traffic light controller using ARM assembly and a TI Tiva Launchpad
  - Designed and constructed a controller using JK flip-flops, AC signal generator for a clock, LEDs, AND and OR logic gates
  - Implemented techniques such as Karnaugh maps, Boolean algebra, transition tables, and used SimUaid software

## **DC Servo Motor PID Controller (MATLAB, Simulink)**

*November 2020 - December 2020*

- Designed a PID controller for a system using two DC servo motors. One motor turned a slotted wheel, and the other controlled a cart that holds a glass rod. The controller needed to allow the glass rod to go through the slotted wheel without breaking
- Used Simulink to model block diagrams, and ran simulations to create an optimized controller for the system

## **ACTIVITIES**

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### **IEEE, Build-a-Bot Competition (Academic Outreach Committee)**

*Fall 2017 - Spring 2021*

- Won 2nd place as a team in annual Build-a-Bot competition, building the maximum number of microcontroller projects (7 in total) such as a step-tracker and mini robots in four hours using C/C++
- Planned events at local schools to showcase electrical engineering as part of the Academic Outreach Committee

### **Underwater Robotics Program, Texas A&M CC (Head Resident Assistant)**

*Summer 2016, 2017*

- Taught thirty high school students introductory Autodesk Inventor CADing and 3D Printing
- Helped student teams design, construct, and race underwater robots built with PVC Pipes and DC motors
- Oversaw all thirty students as head resident assistant and organized social activities for the students

### **Commuter Assistant Program (Commuter Assistant, Weekly Meeting Leader, November Event Leader)**

*Fall 2020*

- Mentored commuter students by giving them advice about our university and helped give guidance about general college life
- Lead the November Event, where I oversaw an event that was designed to host around a hundred students
- Started Weekly Meetings for students so that they could interact with each other during the COVID-19 quarantine. Assigned as Weekly Meeting Leader
- Streamlined communication between students and Commuter Assistants by initiating a casual group chat, which made the program a success

### **Off-Campus and Commuter Student Association (President)**

*Fall 2020*

- Created organization that represented commuter students at the University of Houston
- Organized monthly events to create fun activities for commuter students such as Jeopardy, Bingo, and Virtual Museum tours

### **American Institute of Aeronautics and Astronautics (Member)**

*Fall 2020*

- Assisted a research team when helping make a payload for a rocket, which survived the extreme rocket environment
- Taught students the basics of soldering and circuit design

## **SKILLS**

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- **Programming:** ANSI C, C++, HTML, CSS, JavaScript, MATLAB, ARM Assembly, Mathematica
- **Computer Skills:** Autodesk Inventor, Autodesk Fusion 360, TinkerCad, MS Excel, PowerWorld, LT Spice, PSIM, Simulink, EasyEDA, SimUaid