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# Vedant Chopra

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## EDUCATION

**University of Houston (Honors College)** Houston, TX Expected to Graduate: May 2021

- Electrical Engineering B. Sc. 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

**Smart Drip Irrigation System (Autodesk Inventor and EasyEDA)** *Fall 2020- Spring 2021 (Expected)*

- 3D designing smart-drip irrigation system, PCB, and a container for impoverished Nicaraguan farmers
- Leading power system integration for system using solar panels, charge controllers, and lead-acid battery

**Two Signal Frequency Meter and Comparator (Team Project)** *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 can also compare two input signals by finding the difference of their frequencies based on their output voltage
- Researched different types of circuits to develop our own circuit and wrote sixteen-page technical report
- Fabricated Transistor Charge Pump that uses discrete components for frequency to voltage conversion

**State-Space Controller for Bicycle Stability (MATLAB)** *November 2020- December 2020*

- Designed a controller for stabilizing a turning bicycle using MATLAB's state-space functionality
- Coded my physics analysis and checked for preliminary characteristics so that I can design the controller using state-space analysis
- Used Simulink to model block diagrams, and ran simulations to create an optimized controller for bicycle

**Traffic Light Controller** *November 2019*

- Designed and constructed a two-way traffic light 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

## ACTIVITIES

**Build-a-Bot Competition, IEEE (***Member of Education Outreach Committee)* *April 2019*

- 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 from a given list
- Coded projects using C/C++ using Arduino and TI Launchpad MSP430 microcontrollers

**Texas A&M CC, Underwater Robotics Program** (*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)* *December 2020*

- Leading weekly sessions with students to help them build their social network, and currently organizing a large social event to host around a hundred commuter student

## SKILLS

- **Programming:** ANSI C, C++, JavaScript, MATLAB, ARM Assembly, Mathematica
- **Computer Skills:** Autodesk Inventor, Autodesk Fusion 360, Tinkercad, MS Excel, PowerWorld, LT Spice, Simulink, EasyEDA, SimUAid