Aaron Vera

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EDUCATION

Texas A&M University **College Station, TX**

Bachelor in Electrical Engineering, Minor in Mathematics May 2024

• Major GPA: 3.044

EXPERIENCE

CAD Designer Intern

Hughes Data Systems LLC | Corpus Christi, TX **May 2022 - August 2022**

• Developed and engineered intricate 3D models and comprehensive technical drawings utilizing AutoCAD 2020, collaborating closely with senior engineers to ensure precision and adherence to industry standards.

• Enhanced model designs, securing a balance between cost-effectiveness and superior performance, contributing to project success.

• Operated the 3D resin printer, assessing numerous designs and identifying optimal solutions through iterative testing.

Web Developer Intern

Hughes Data Systems LLC | Corpus Christi, TX **May 2021 - August 2021**

• Translated client requirements into creative and functional web designs that function on every platform.

• Remodeled webpages using design principles to improve visual appeal, while effectively conveying brand identity.

• Successfully integrated the back end of webpages to function and display seamless into the front end to optimize and enhance user experience and navigation.

PROJECTS

Smart Indoor Watering System

Sponsor: Texas Instruments • August 2023 - April 2024

• Engineered and implemented an interconnected smart indoor watering system for easy home plant management.

• Developed Python scripts and firmware to enable system automation, focusing on watering needs, email alerts and data TX/RX protocols, reducing system response to less than 30 milliseconds.

• Attended weekly meetings with TI engineers to present system progress, discuss project milestones, and gather feedback, enabling the integration of expert insight and ensuring alignment with industry best practices.

• Designed an SQL-backed web application for remote monitoring and control of the watering system, enhancing accessibility and convenience for users.

Distribution Substation Design and Simulation

• Designed a small-scale 230kV/13.8kV substation power distribution substation using AutoCAD, focusing on key components such as transformers, circuit breakers, and distribution feeders in compliance with IEEE and NEC standards.

• Modeled the substation using ETAP software, including the utility system equivalent, overhead transmission line, power transformer, underground cable, substations bus, feeder loads, and protective relays.

• Performed short circuit load flow analysis using ETAP to evaluate distribution network capacity and efficiency under various load conditions.

• Developed and modified detailed single-line diagrams (SLDs) to represent power flow, protective relays, and equipment layouts.

Three Band Active Audio Equalizer

April 2024 - May 2024

• Developed an active tone control circuit capable of wide band frequency response (20Hz to 18kHz).

• Implemented bass, treble, and mid-frequency controls with a range of ±6dB adjustment, allowing for precise customization of audio output characteristics.

• Calculated cutoff frequencies for bass, mid, and treble controls, ensuring precise frequency response adjustments.

• Validated the circuit's performance through simulation and hardware testing procedures to confirm the achieved desired functionality and adherence to desired benchmark specifications.

SKILLS

Software: ETAP, MicroStation, AutoCAD, LTSpice, Multisim, Revit, Cadence,

Programming: Python, C, C++, MATLAB, Java, PLC, JavaScript, SQL, Verilog

Hardware: Digital multi-meter, Raspberry Pi, Analog Discovery 2, Oscilloscope