

ELLIOT GELBTUCH

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EDUCATION

Columbia University, New York, NY

Graduated: April 2021

Bachelors of Science in Electrical Engineering | GPA: 3.68 | Dean's List

Relevant Coursework: Data Structures in Java, Creative Embedded Systems, Digital Image Processing, Circuit Analysis, Signals & Systems, Probability, Electronic Circuits, Comm Systems, Electromagnetics, Computer Systems, Digital Circuits Lab, Classical Control Systems, Solid State Devices-Materials, Robotics Studio

WORK EXPERIENCE

Unique Technical Services, Holbrook, NY

May 2021 - Present

Electrical Engineer

- Developed and tested C/C++ code for all-electric trucks' Battery Management System Boards equipped with a STM32 Arm MCU
- Developed and tested Simulink code for VMECs (Vehicle Motion Embedded Controls) on all-electric trucks
- Selected and tested electrical components and devices for all-electric trucks
- Built data analysis scripts and GUIs, utilizing Python and Matlab, used to consolidate, analyze and visualize historical vehicle data
- Designed a PCB in Altium for Low Voltage Junction Box on all-electric trucks
- Designed and selected electrical components for, the sensor, control and power distribution circuits on air purifier units
- Developed and tested control code for ESP32 boards on air purifier units
- Built a public web server that received live diagnostic data over WIFI from air purifier units and displayed the live data on a website using HTML, CSS, JS and React
- Wrote design guides to help with the onboarding of future interns and employees

PROJECTS

Senior Design Project, Columbia University

January 2021 - April 2021

Real-Time Volumetric Music Visualizer & Guitar Tuner

- Built a volumetric swept display using a throttle motor and a 64x64 LED board
- Developed a program in Python that used the Fourier Transform to determine the frequencies and associated amplitudes within live audio data to drive the displayed image and/or give guitarist feedback when tuning a guitar
- Designed a Bluetooth controller using an ESP32 to control the display

Robotics Studio, Columbia University

August 2020 - December 2020

Bipedal Weight-Bearing Robot

- Designed, tested and built a bipedal robot using kinematic principles, Solidworks, a 3D printer, servo motors Python and a Raspberry Pi

Digital Circuits Lab, Columbia University

January 2020 - May 2020

Electric Piano

- Programmed a BASYS FPGA board to operate as a portable electronic piano with auto-play functionality

SKILLS

C | C++ | Python | CAN | Pi Snoop | STM32 CubeMX | STM32 CubeIDE | ESP32 | Arduino | LT Spice | MATLAB | Simulink | Soldering | Excel | SolidWorks Electrical | Altium | FPGA | Verilog | Raspberry Pi | HTML | CSS | JS | Heroku | React