John Alessio

Education – Northeastern University – May 2023 – 3.65 GPA

CANDIDATE FOR BACHELOR OF SCIENCE IN COMPUTER ENGINEERING & COMPUTER SCIENCE

- Coursework: Circuits/Signals: Biomed Apps ~ Embedded Design~ Cornerstone of Engineering 2 ~ Fund. of Networks ~ Fund. of Computer Science 2 ~ Algorithms & Data ~ Discrete Structures ~ Differential Equations & Linear Algebra

Skills & Abilities

- PCB Design (Eagle, Altium)
- Microcontrollers (STM32, Arduino)
- C/C++, Python, Java, C#, bash
- Soldering (THO, SMT, Stenciling, and rework)
- Embedded Linux (Ubuntu/Debian)
- CAN (CANOpen), RS485, Modbus, SPI, I2C
- Version Control (git)
- Multimeter, variable PSU, oscilloscope
- 3D printing & laser cutting
- CAD (Solidworks, Autodesk Inventor)

Experience

ELECTRICAL ENGINEERING COOP| FESTO | JULY 2021 – DECEMBER 2021

- Designed prototype PCB for a low-cost, open-loop, pipette fitting in a 9mm Pitch
- Designed Raspberry Pi hat for 24V conversion, CAN, and RS485 for industrial compute module concept
- Contributed drivers for Modbus devices in Java and C# for an open-source software initiative
- Contributed bug fixes and features to a liquid-handler software project including H-Bridge gantry support, closed loop control, axis factory class, brake and e-stop status support, & TMCM-1241 driver.
- Wrote test scripts for liquid handling system and demo scripts for trade shows.
- Wrote bash script for first time system setup and for system startup

PROJECT LEAD AVIONICS ENGINEER | AEROSPACENU | FALL 2019 - CURRENT

- Leading an avionics mentorship program teaching new members embedded software and PCB design
  - Lead workshops and labs, create presentations and guides, give lectures, & coordinate meetings
- Designed and built multicell LiPo battery charging and management PCBs
- Designed a (mostly) THO Arduino kit for members learning to solder
- Wrote drivers in C++ for IMU and high-g accelerometer using SPI and I2C in use on flight control boards
- Prototyped magnet, spring-loaded, electrical interface for rocket umbilical cord
- Designing new revision of a line-cutter PCB used for reefing parachutes in flight

Personal Projects

- Designing an L2 certification rocket to fly sometime spring 2021
- Successfully designed, built, and flew L1 rocket to receive certification
- Wrote program for playing midi files on Stepper motors to create music
- Created a coin bank with counting/sorting using an Arduino, and 3D-printed/laser-cut parts