Matthew Downing

Education

Northeastern University, Boston, MA 2017 – 2022

- M.S. Electrical and Computer Engineering (Concentration: Computer Systems and Software)
- B.S. Computer Engineering, Minor in Political Science
- Undergraduate GPA: 3.95, Graduate GPA: 3.79
- *Relevant Coursework:* Microprocessor-Based Design, Operating Systems, Electric Drives, Assistive Robotics, Wireless Sensor Networks & IoT, Capstone Design, High-Performance Computing, Computer Architecture, Hardware and System Security, VLSI Design, Software Engineering, Engineering Algorithms, Digital Design and Computer Organization, Networks, Electronics, Embedded Design, Circuits and Signals, Discrete Structures
- *Achievements:* University Honors Program, Eta Kappa Nu Honor Society, Tau Beta Pi Honor Society

Work and Volunteer Experience

- Asensus Surgical, Durham, NC June 2022 - Present
  - Current Role: Electrical Engineer
- Festo, Billerica, MA (Six Month Co-op) January – June 2021
  - Prototyped and designed Open Loop Pipette from first prototype to proof of concept
  - Created schematics and PCBs for multiple prototype revisions using Circuit Maker PCB tool
  - Designed and implemented electrical setup for gantry control system
- Twiddy & Company, Duck, NC (Field Services) Summer 2020
  - Worked on a team of maintenance technicians at over 500 vacation rental homes during the summer solving over 1100 work orders from plumbing to Wi-Fi repair
- Digital Lumens, Division of Osram Licht AG, Boston, MA (Six Month Co-op) July – December 2019
  - Worked on the hardware development team prototyping projects, solving issues with current and future products, and gaining hands-on hardware experience
  - Led development on a motion sensor project while learning the skills of schematic design, PCB layout, sensor debugging, board buildup, and testing
- DuPont de Nemours, Inc., Wilmington, DE (Summer Intern) Summer 2019
  - Worked on Smart Materials team within R&D group focusing on analyzing sensors for use in embedding within DuPont polymer materials, creating a new pathway for sales
  - Worked on a project prototype shown to DuPont executives as a proof of concept, which expanded my knowledge in Raspberry Pi, Python, Visual Basic, and network data transfer
- Roxbury Robotics, Northeastern University 2017 – 2022
  - Instructed students on robotics and engineering concepts at sites throughout Roxbury
  - Mentored volunteers which involved planning, coordinating with students, and leading volunteers at the site, managed finances and funding of events as Treasurer

Technical Skills

- Hardware: Altium, Circuit Maker, Soldering including 0402, QFN, and SOIC components; 3D printing, Arduino, Raspberry Pi
- Software: STM32CubeIDE, C/C++, Python, CAN/SPI/I2C communication protocols, SolidWorks 3D modeling, Arena BOM management