

Mark E. Vrablic

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Education

Massachusetts Institute of Technology

Cambridge, MA

- Bachelor of Electrical Science and Engineering – June, 2019 – GPA: 4.4/5
- Masters of Engineering – September, 2020 – GPA: 4.3/5

Work Experience

Analog Devices BMS Senior Applications Engineer – Fall 2020 to present

Plano, TX

- Support for ADI BMS parts by working closely with customers to optimize their designs.
- Built automated bench setups to test pre-release eval boards, optimizing the application circuit before release.
- Wrote supplemental papers for customers to reference when designing using ADI products.

MIT Teaching Assistant – Spring term 2020

Cambridge, MA

- TA for 6.101 – Analog Electronics Laboratory. Responsible for overseeing 1/3 of the projects in the class, course planning, exam review, grading, and giving some lectures.

Texas Instruments RF Validation Engineer Intern – Summer 2019

Dallas, TX

- Performed RF analysis of wireless microcontrollers clocked by a piezoelectric BAW resonator
- Responsible for finding and measuring RF signal variation under mechanical vibration and shock testing

MIT Laboratory Assistant – Fall and Spring term 2018

Cambridge, MA

- Laboratory assistant and team mentor for MIT class 6.811, Principles and Practices of Assistive Technology
- Laboratory assistant for MIT class 6.101, Analog Electronics Laboratory

BrainCo Electrical Engineering Intern – Summer 2018

Somerville, MA

- Designed and validated a variety of analog filters for EMG signal acquisition on a prosthetic arm
- Created a filter PCB to attach to the electrodes with Altium Designer, now used in the prosthetic arm

Bhav.AT/Co-CreATe Teacher – Aug 2018, Jan 2019, Jan 2020, Feb 2022

Delhi, Chennai, Hyderabad, and Riyadh

- Taught electrical engineering to students in India and Saudi Arabia through its use in Assistive Technology
- Responsible for planning and teaching classes

MIT Undergraduate Researcher – Part-time 2016 - 2018, Full-time Summer 2016 and 2017

Cambridge, MA

- Built and programmed a system of materials science simulations using Unity game engine and Microsoft Kinect
- Presented project at the “World Maker Faire 2016” in New York City
- Mentored and supervised high school students working on simulations for the system

MIT Teaching Assistant – January term 2016, January term 2017

Cambridge, MA

- Taught a class of 50+ students, “Learn to Build Your Own Videogame with the Unity Game Engine and Microsoft Kinect” and “Collaborative Design with Arduino”, now available on MIT OpenCourseware
- Responsible for curriculum design, class planning, lectures, as well as assisting in team project troubleshooting

Hardware Projects – Pictures, Videos, and more at www.markv.me

Automated Power Wheelchair Control Joystick – class project: Principles and Practices of Assistive Technology

- Designed, built, and documented a powered controller arm for people with multiple sclerosis on a team of four
- Designed electronics and programmed the device using feedback based on weekly visits with client
- Currently used by individuals with multiple sclerosis at the Boston Home in Dorchester, Massachusetts
- Presented project to MIT EECS visiting committee

Dorm Room Automation System – personal project

- Designed, built, and programmed a web-connected room automation system capable of unlocking the door, raising/lowering a projector screen, turning on/off the lights, and monitoring the room via live webcam

Electronics Repair – personal project

- Reverse engineering, tracking, and repairing component failures in various broken electronics
- Items fixed include TVs, laptops, variable power supplies, and computer parts

Technical Skills

- Circuit design, debugging, and simulation
- Python – PyVISA, NumPy, pandas, etc
- Altium Designer and KiCad EDA

Hobbies

- 3D printing and laser cutting
- Carpentry – lofts, flooring, wall-to-wall desk, etc.
- Home automation