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 Applications Engineer – *Fall 2021 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 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 – *August 2018, January 2019, January 2020*   *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	Hobbies
• Circuit design, prototyping, and simulation	• 3D printing and laser cutting
• Python	• Carpentry – lofts, flooring, wall-to-wall desk, etc.
• Altium Designer and CircuitMaker EDA	