

Benjamin D. Manley

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EDUCATION

University of Michigan, Ann Arbor, MI

May 2021 B.S.E. / May 2022 M.S.E.

B.S.E & M.S.E. in Computer Science, Minor in Physics

3.96 / 4.00 GPA

Honors: 1931E Scholar Society, Dean's List, James B. Angell Scholar

Relevant Coursework: Web Systems, ML, CV, OS, UI Development, Computer Security, Computer Arch., Physics (E&M, Heat/Waves, Modern Phys), Calculus, Statistics, Linear Algebra

Hong Kong University of Science and Technology, Study Abroad in Clear Water Bay, Hong Kong

June – Aug 2018

EXPERIENCE

Microsoft Garage, Cambridge, MA

Software Engineering Intern

June – Aug 2020

- Delivered a new feature in Microsoft Teams' personal messaging platform, working from conception to shipment in 11 weeks in a full-stack, all-intern team using Agile workflow
- Developed scalable client and backend code in Android and C# enterprise codebases (~1 bill. hits to my code / day)
- Implemented the first feature to follow brand-new standards for operational telemetry data and code structure
- Performed manual and automated tests to build accessible UI for blind and motor-impaired users

Honeybee Robotics Spacecraft Mechanisms Corp., Pasadena, CA

Software Engineering Intern

June – Aug 2019

- Created new flight software system to be used on multiple space missions in the next decade
- Developed real-time, memory-constrained flight software with FreeRTOS for interrupt-driven timing, serial communication, and translation of system tick counts into J2000 using intermittent time correlation packets
- Designed a method of timestamping to minimize overhead during critical data collection
- Organized modular code structure, automated build-deploy-debug process with Bash, documented codebase for use/development by full-time engineers, and presented work to company executives

EECS 370 (Computer Organization), Ann Arbor, MI

Instructional Aide

Aug 2020 – Present

- Teach students about compilers/linkers, assembly, processor pipelines and caches, virtual memory, etc.

Michigan Robotic Submarine, Ann Arbor, MI

Co-Founder, Software Lead

Feb 2020 – Present

- Led a team of engineers to develop autonomous control and navigation software for an underwater vehicle
- Integrated computer vision with motor control using ROS with custom inter-process messages

Michigan Hyperloop, Ann Arbor, MI

Controls Subsystem Lead

Sept 2018 – Feb 2020

- Managed a team to design and implement a computer system and sensor array to control our Hyperloop Pod
- Oversaw physical and functional integration with the rest of the subsystems to create one unified product
- Developed software for serial communication, sensor data acquisition, telemetry algorithms, error handling, internal state-checking, and a heartbeat system between on-board microprocessors
- Performed component research, state diagram design, sensor hardware testing, and Linux kernel configuration

M-agination Films Production Group, Ann Arbor, MI

Producer | Editor | Sound Technician

Oct 2017 – Present

- Selected scripts and led production, shot continuity, audio recording, and editing on numerous short films

SKILLS

Programming Languages: C/C++, Python, Java (+ Android), HTML/CSS, JS (+ React), Bash, basic exp. in C#, Assembly

Development Tools: Git, Vim, VS/VSCode, Android Studio, Expo, Azure DevOps, Xilinx Vivado/SDK, FreeRTOS

Media Software: Adobe Premiere Pro, Adobe Photoshop, Adobe Audition, LaTeX

MISCELLANEOUS

Ear Peace: Save Your Hearing Foundation, Nonprofit Board Member and Ambassador

Aug 2013 – Present

TEDx Youth@Miami, Speaker

Feb 2015