

# Benjamin D. Manley

(305) 331-0034 | bdmanley@umich.edu

## EDUCATION

**University of Michigan, Ann Arbor, MI**

May 2021

*B.S.E in Computer Science, Minor in Physics*

**3.94 / 4.00 GPA**

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

Relevant Coursework: Data Structures, Algorithms, Computer Architecture, Java, Physics, Calculus, Statistics, Linear Algebra, Computer Security, Web Systems, ML, OS, UI Development, Circuits

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

June – Aug 2018

## EXPERIENCE

**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

**University of Michigan Hyperloop Design Team, Ann Arbor, MI**

*Controls Subsystem Lead*

Sept 2018 – Present

- Manage a team of engineers to design and implement a computer system and sensor array to semi-autonomously control our Hyperloop Pod
- Oversee physical and functional integration with the rest of the subsystems to create one unified product
- Teach new members about control systems through hands-on-learning and delegation of responsibilities

*Controls Engineer: Sensors, Telemetry, Inter-Board Communication*

Sept 2017 – Aug 2018

- Developed software for serial communication, sensor data acquisition, telemetry algorithms, internal state-checking, and a heartbeat system between the on-board microprocessors
- Performed component research, system design, sensor hardware testing, and Linux OS configuration
- Acquired over 10% (\$11,000+) of team's budget in sponsorship through corporate outreach
- Attended the 2018 SpaceX Hyperloop Pod Competition as one of the top 20 designs internationally

**M-agination Films Production Group, Ann Arbor, MI**

*Producer | Editor | Sound Technician*

Oct 2017 – Present

- Artistically and logistically manage production of films and select scripts for the group to produce
- Lead audio recording and mixing on-set and manage sound department crew members
- Edit film and audio with the Adobe Suite and manage shot continuity on-set

## SKILLS

**Programming Languages:** C/C++, Python, Java, Bash, basic exp. in C#, Assembly, HTML/CSS, JavaScript

**Development Tools:** Git, Vim, Visual Studio, Xilinx Vivado/SDK, FreeRTOS, basic exp. in Xamarin, Android Studio

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

## MISCELLANEOUS

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

Aug 2013 – Present

Conduct seminars on noise-induced hearing loss to students nationwide, vote on organizational plans of action on the Board of Directors, and film and edit PSA videos

**MHacks 11, Hackathon Participant**

Oct 2018

Multi-process Python utility allowing Super Mario Bros to be played by playing the theme song on a MIDI piano

**TEDx Youth@Miami, Speaker**

Feb 2015