Mckenna Cisler

Software | Embedded | Robotics

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EDUCATION

B.S. Computer Science & B.A. Engineering, *Brown University,* *Providence, RI* **GPA:** 3.80 / 4.0 **Sept 2016 — May 2020**
Courses: Digital Electronics Systems Design, Electrical Circuits and Systems, Machine Learning, Distributed Computing Systems, Algorithms, Signals & Systems, Operating Systems, Design of Computing Systems, Collaborative Robotics

TECHNICAL EXPERIENCE

Avionics Intern, *Boom Supersonic,* *Denver, CO* **May 2019 — Aug 2019**

- $141M Series B supersonic airliner startup developing single-seater Mach 2.2 demonstrator aircraft.
- Led clean-sheet design of mission-critical aircraft-tracking telemetry ground station, including requirement definition, critical design review, component integration, and C++ controller & user interface, for 5% of the cost of the commercial alternative.
- Developed a software tool to enable automated requirement verification based on software unit test results. Will be used to enable rapid flight software deployment during flight testing.

Software Engineering Intern, *The MITRE Corporation,* *Bedford, MA* **June 2018 — Aug 2018**

- Built Android app to automate radio network and power consumption testing. The app used UI automation to control components of a client app in order to produce realistic simulated user interaction and network traffic. Integrated with existing remote test infrastructure.
- Enabled execution of a 250-node radio test by eliminating the need for human participants to operate phones.

Technical Lead / Flight Software Engineer, *Brown Space Engineering,* *Brown University* **Sept 2016 — Present**

- Leading all technical projects for 75+ student team which designs and flies open-source CubeSats from scratch.
- Leading preliminary design and writing of a launch grant application for the team's next satellite.
- Worked on flight & ground software, RF systems, and telemetry analysis for "EQUiSat" CubeSat launched in July 2018.
- Designed satellite operating system; wrote RTOS-based system in C for satellite control, data transmission, and hardware interfacing.
- Wrote satellite bootloader to correct program memory from radiation-safe backup; performed pre-launch satellite configuration.

Robotics Technician, *Humanity-Centered Robotics Initiative,* *Brown University* **Sept 2016 — Dec 2018**

- Led clean-sheet design and construction of hardware and software for "Walkerbot" elderly assistive robot (C++, ROS, BeagleBone).
- Built analytics logging API and database for studying user interaction with an assistive toy (Node, C#, MongoDB).
- Prototyped ultrasonic localization system to help the elderly find household objects (ATtiny, NodeMCU, Node).
- Designed trash can monitoring system for Brown Facilities Department; ran successful trials (Node, NodeMCU).

Teaching Assistant, *Introduction to Computer Systems,* *Brown University CS Department* **Aug 2018 — Dec 2018**

- Held office and lab hours, graded student work, and developed course labs and projects.

Educational Resource Developer, ***White Mountain Science, Inc.***, *Bethlehem, NH* **May 2016 — Aug 2017**

- Designed High Altitude Balloon (HAB) systems and procedures to enable high schools with minimal resources to launch experiments.

PERSONAL PROJECTS

- Java / Javascript webapp for the Wikipedia game; developed websocket communication protocols, designed Wikipedia page link caching system to speed up page crawling and game generation. *Introduction to Software Engineering final team project*
- Javascript-based academic citation conversion engine and Apache / PHP web app; 1000+ weekly visitors.
- Q-learning AI for checkers using TensorFlow. *Hack@Brown team.*
- Raspberry-Pi-based DIY alarm clock with Python / Javascript web interface.
- Visualization of socioeconomic data on Hubway stations using Node, D3.js. *Brown Datathon team.*
- Webapp to show public sentiment of firms by analyzing news coverage. Node, MongoDB. *HackHarvard team.*

SKILLS

Languages	Strong in C, C++, Java, Python; Proficient in Javascript, Go, Verilog; Experience with MATLAB
Tools	Strong in FreeRTOS, ROS, Node, jQuery, Bootstrap, & Git; Proficient in React, OpenCV, Android
Other	CAD (Inventor, OnShape, Blender), 3D Printing, Laser Cutting, Mill & Lathe Atmel MCUs, FPGAs, Raspberry Pi, Arduino, and digital/analog circuits Graphic design (Premier, Blender, GIMP, Photoshop, Inkscape) Amateur radio operator (callsign KC1ICW), student pilot (51 flight hours), and FIRST Robotics (FRC) alum