

# Mckenna Cisler

Software | Embedded | Robotics

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## EDUCATION

**B.S. Computer Science & B.A. Engineering, Brown University, Providence, RI** GPA: 3.83 / 4.0 **Sept 2016 — May 2020**

**Courses:** Intro to Software Engineering, Operating Systems, Algorithms, Machine Learning, Distributed Systems, Computer Networks, Collaborative Robotics, Digital Electronics Design, Design of Computing Systems, Signals & Systems, Advanced Digital Design

## 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 automate requirement verification based on software unit test results. Will be used to enable rapid flight software deployment during flight testing (Python, C++).

**Software Engineering Intern, The MITRE Corporation, Bedford, MA**

**June 2018 — Aug 2018**

- Built Android app using UI automation to automate radio and power consumption testing. Integrated with existing test infrastructure.
- Enabled execution of a 250-node radio test by eliminating the need for human participants to operate individual 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.
- Working on flight & ground software, RF systems, and telemetry analysis for EQUiSat CubeSat launched in July 2018 (still operating).
- Designed RTOS-based satellite OS components in C which have operated continuously in space for > 1 year, including critical control logic, data transmission, hardware interfacing, and bootloader to correct program memory from radiation-safe backup.

**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).
- 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 (Atmel MCU, Node).
- Designed trash can monitoring system for Brown Facilities Department; ran successful trials (Node).

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