Mckenna Cisler

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EDUCATION

B.S. Computer Science **GPA:** 3.77 / 4.0 **Sept 2016 — May 2020**
***Brown University**, Providence, RI*
Courses: Introduction to Software Engineering, Introduction to Computer Systems, Digital Electronics Systems Design, Electrical Circuits and Systems, Machine Learning, Distributed Computing Systems

TECHNICAL EXPERIENCE

Software Engineering Intern
The MITRE Corporation **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 system with an existing control server for centralized test configuration and synchronized execution.
- 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 Club,** Brown University* **Sept 2016 — Present**
- Overseeing all technical projects for 75+ student club: satellite maintenance, future missions, and HAB launches.
- Working on flight & ground software and telemetry analysis for “EQUiSat” CubeSat launched in July 2018.
- Developing ground station software, radio systems, and data processing systems for ground station network.
- Designed satellite operating system; wrote RTOS tasks in C for data recording, command and control algorithms, and OS state handling. Wrote concurrency systems for protecting hardware interfaces.
- Developed transmission schema and protocols; performed link budget calculations.
- Wrote bootloader to correct program memory from RAD-safe backup memory; uploaded final satellite binary.

Robotics Technician
***Humanity-Centered Robotics Initiative,** Brown University* **Sept 2016 — Present**
- Designed and built 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, MongoDB).
- Prototyped ultrasonic localization system to help the elderly find household objects (ATtiny, NodeMCU, Node).
- Prototyped universal video conferencing and teleoperation platform for telepresence robots (Node, P2P, ROS).
- 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 — Present**
- Holding office and lab hours, grading student work, and developing course labs and projects.

Educational Resource Developer / Instructor
***White Mountain Science, Inc.,** Bethlehem, NH* **Jan 2015 — Aug 2017**
- Designed High Altitude Balloon (HAB) on-board, tracking, and retrieval systems and procedures.
- Built ATtiny85-based “paper circuit” controller to be sold to educators, including documentation, manufacturing, and marketing materials; shipped 10 prototypes to local school.
- Developed educational tools and coding lessons (ScratchX extensions, Javascript & Scratch tutorials).

PERSONAL PROJECTS

- Java / Javascript webapp for Wikipedia Game; developed websocket communication protocols, designed Wikipedia page link caching system to speed up page crawling and game generation; decreased memory usage by 60% for Heroku deployment. *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*
- 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 Java, C, Python; Proficient in Javascript, Go; Experience with C++, Verilog
Tools	Strong in jQuery, Bootstrap, FreeRTOS & Git; Proficient in Node, React, Python Tornado, Android, ROS
Other	CAD (Inventor, OnShape, Blender), 3D Printing, Laser Cutting & Lathe Raspberry Pi, Arduino, Atmel MCUs, FPGAs (minimal), and digital/analog components Graphic design (Premier, Blender, GIMP, Photoshop, Inkscape) Amateur radio operator (callsign KC1ICW), student pilot (can fly solo), and FIRST Robotics (FRC) alum