Mckenna Cisler

Software | Embedded | Robotics

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EDUCATION

B.S. Computer Science & B.A. Engineering, *Brown University,* *Providence, RI* **GPA:** 3.88 / 4.0 **Sept 2016 — May 2020**
Courses: Operating Systems, Algorithms, Machine Learning, Distributed Systems, Computer Networks, Collaborative Robotics, Digital Electronics Design, Design of Computing Systems, Signals & Systems, Advanced Digital Design, Control Systems, Communication Systems

TECHNICAL EXPERIENCE

Flight Software Intern, *NASA Jet Propulsion Laboratory*, *Pasadena, CA* **June 2020 — Aug 2020**
- Developed flight software module in C for Psyche mission to a metal asteroid.

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 — May 2020**
- Led all technical projects as co-president of 75+ student team which designs and flies open-source CubeSats from scratch.
- Led preliminary design and writing of a NASA 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 (still operating).
- Designed RTOS-based satellite OS components in C which have operated continuously in space for > 2 years, 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, *Brown University CS & Engineering Departments* **Aug 2018 — May 2020**
- Graded, held office hours, and developed projects for Computer Systems, Digital Electronics Design & Design of Computing Systems.

PERSONAL PROJECTS

- Patent-pending actuated walker for the elderly to prevent falls; responsible for hardware bringup, software architecture, and control algorithm. *1st place in $40K Analog Devices Sensor Fusion Challenge, Best Hardware Hack at Hack@Brown. www.jungyeop.com/args*
- Java webapp for the Wikipedia game; developed server API and link graph caching system. *Intro to Software Engineering team project.*
- Javascript-based academic citation conversion engine and Apache / PHP web app. 1000+ weekly visitors. w*ww.citationconverter.com*
- 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.*

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