

# Richard G. Wendel, III

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## Education

University of Illinois at Urbana-Champaign

Major: Computer Science; Minor: Electrical Engineering

*B.S. expected May 2019*

- GPA: 3.87, James Scholar Honors
- Current Coursework: Real-Time Systems, Control Systems

## Work Experience

Software Engineering Intern, Algorithms Team – Ball Aerospace, Boulder, CO

*June – August 2018*

- Developing in C++ for a low-power, embedded PowerPC running VxWorks to do image processing and tracking on a satellite, as a part of the algorithms and flight software teams
- Designed algorithms using MATLAB, unit tested to verify ported C++ functionality
- Improved tracking algorithm performance, speeding up assignment algorithm using binning
- Profiled the embedded platform to find hot spots in the Kalman filter based motion models
- Led electronics design, integration, and testing for two payloads for BIRST, an intern program launching payloads on ULA's Future Heavy sounding rocket

Software Engineering Intern, Flight Software Team – Ball Aerospace, Boulder, CO

*June – August 2017*

- Developed data collection, command and telemetry software for a Flight Demonstration program. Heavily involved in interfacing with COTS hardware in a lab environment
- Worked in a multi-threaded C++ Linux stack, often venturing into C to interface with device drivers
- Interfaced with GPS and a PCI timing card to synchronize local NTP time server for other networked computers
- Led sensor suite development for BIRST, an intern program launching payloads on high-altitude balloons

Summer IT Intern – Goodyear Tire & Rubber Company, Akron, OH

*May – August 2016*

- Designed custom SharePoint solutions in C# and JavaScript to solve internal needs

Summer Intern – INTERalliance of Greater Cincinnati, working at Procter & Gamble

*June – August 2015*

- Automated data processing with Google Apps Scripts, and visualized data using Google Maps v3 API

## Projects

Illini Hyperloop – President and Electronics Lead

*September 2017 – Present*

The team competes in the SpaceX Hyperloop Pod Competitions, building 2 meter self-propelled 'pods' to race down SpaceX's mile-long vacuum tube.

- Lead team of 20 students on the design, testing, and construction of our vehicles
- Oversee mechanical and electrical designs, managing requirements and performance capabilities
- Teach soldering, circuit design, battery operation, and other fundamentals to new team members
- Lead development and testing of high-power Li-ion battery and BMS
- Develop IO interface on embedded Linux flight computer. Program real-time units for reliable sensor data
- Create testing apparatus for frictionless magnetic propulsion disks to measure propulsive force

HackMIT 2016

*September 2016*

- Won the Local Motors grand prize. Hacked a computing package for a drone delivery system using an Intel Edison, an IoT kit for flight data, and OpenCV for facial recognition

Custom Controlled Quadcopter – [instructables.com/id/The-Pi-Quadcopter/](http://instructables.com/id/The-Pi-Quadcopter/)

*December 2015 – April 2017*

- Created native Android joystick controller, sending RC telemetry via Wi-Fi to a mounted Raspberry Pi running a C++ web socket

## Languages & Skills

**Skilled:** C, C++, Embedded Linux, Git, LabVIEW, Atmel AVR, Atlassian tool suite, Microsoft Office

**Proficient:** Python, MATLAB, Atmel Studio, Java, C#, OCaml, Android SDK, OpenCV, Javascript