**Richard G. Wendel, III**

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**Education**

**University of Illinois at Urbana-Champaign, GPA: 3.87, James Scholar Honors**

**Major: Computer Science; Minor: Electrical Engineering**  *B.S. expected May 2019*

* Current Coursework: Real-Time Systems, Control Systems

**Work Experience**

**Software Engineering Intern, Ball Aerospace,** Boulder, Colorado*May-August 2018*

* Worked on flight software and algorithms teams, developing in C++ for a low-power, embedded PowerPC running VxWorks to do image processing and tracking on a satellite.
* Designed algorithms using MATLAB, unit tested to verify ported C++ functionality.
* Improved performance of how tracking vectors are assigned to observations in each new frame.
* Profiled the embedded platform to find hot spots in the Kalman filter based motion models.
* Lead 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,** **Ball Aerospace,** Boulder, Colorado  *May-August 2017*

* Developing data collection, command and telemetry software for a Flight Demonstration program. Heavily involved in interfacing with COTS hardware in a lab environment.
* Worked on 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.
* Lead sensor suite development for BIRST, an intern program launching payloads on high-altitude balloons.

**Summer IT Intern,** **Goodyear Tire & Rubber Company,** Akron, Ohio  *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, Team Captain** *October 2015 - Present*

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

* Team Captain since July 2017. Electronics lead June 2016-17.
* Lead team of roughly 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, magnetic interactions, and more basics to new team members.
* Created testing apparatus for frictionless magnetic propulsion disks to measure propulsive force.
* 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 high reliability sensor data.

**Delivery Dynamics, HackMIT** *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**  *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. Relaying commands to the MultiWii flight controller.
* Instructable detailing entire build process: instructables.com/id/The-Pi-Quadcopter/

**Languages & Skills**

**Proficient with:** C, C++, Embedded Linux, LabVIEW, Atmel AVR, Microsoft Office

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