

user@desktop:~\$ **Vaughn Kottler** 

## Embedded Systems & Mechatronics, Full-Stack & Workflow Infrastructure

**Education:** **UW-Madison, Fall 2018** (Dean's List 5/7 Semesters, Summer 2016) GPA: 3.45  
- Majors: Computer Engineering (Degree Program), Computer Science

**Work:** **SpaceX** ([Software Engineering Intern](#)) *Fall 2017, Summer 2018*  
- Responsive user interfaces (web stack) for next generation ground systems  
- LabVIEW automation & continuous integration distributed as a Python package

**Extreme Engineering Solutions** ([Associate Embedded Engineer](#)) *Spring - Fall 2017*  
- Bootloader development for non-Intel architecture systems ([U-Boot](#))

**State Farm** ([Software Development Intern](#)) *Summer 2016*  
- Web app. with Spring Framework + Maven & Angular.js 1.X, first TDD

**UW-Madison College of Engineering** ([ULC Campus Tutor](#)) *Fall 2016 - Present*  
- Intro. programming, circuits, & digital logic courses

**UW Plasma Physics** (Student Hourly, Computing) *Spring 2015 - Spring 2016*  
- My introduction to web development, system administration, PHP and MySQL

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**Skills (CE):** **Schematic Design & PCB Layout, Processor Driver/Firmware Development, Verilog:**  
- x86/ARM/MIPS/PowerPC development in C/C++ (some asm.) with modern build+test tools  
- Configuring [GNU make](#), [Bazel](#) and custom build systems, acclimating to large codebases  
- Altium & KiCad schematic and PCB layout experience, some Spice simulation exp.

**Hardware Communication Protocols:** *U[S]ART, I2C, CAN, SPI, USB, Ethernet, PCIe*  
- Non-blocking I/O & RTOS, CANopen & custom application layer protocol experience

**Hardware-Level Software Debugging:** *Logic Analyzers, Oscilloscopes, Multimeters*  
- Proficient with debugging tools, aware of when to use (and how to not break them!)

**Math & Signal Processing:** *Kalman filtering & quaternions (gyro. + accel. work)*

**Skills (CS):** **Web Development (Full Stack):** *Performant and Reliable | CI + DevOps Automation*  
- Frameworks: Polymer, Angular [+Material Design], Bootstrap, none / from scratch  
- Java EE, JavaScript/Node.js, PHP, SQL, HTML5 & CSS3, Go, Python

**DBMS & System Administration:** *Gentoo, Ubuntu, CentOS/RHEL, [De|Rasp]bian*  
- Vagrant, Ansible, Docker & Bash script automation, mailing configs  
- Apache/NGINX configs (mult. vhosts), DNS with SSL administration  
- [My|Postgre]SQL, MongoDB, CouchDB, Redis (as user and admin.)

**Programming:** *Prefer C/C++, Python, Java | Vim+tmux @ 100% duty cycle ([.vimrc](#))*  
- Avoiding concurrency pitfalls, custom HALs and drivers, coherent architectures  
- Multi-platform software ecosystems, GDB-style debugging, efficient workflows (git)

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**Involvement:** **Badgerloop | Software Development Club:** *Extremely demanding, long-term projects*  
- (Former) Electrical Tech Director, Software & Controls Lead | Technology Chair

**Awards:** Badgerloop - Innovation Award (x2), Design Weekend 3rd Place  
UW Madison - Intro to IoT Hackathon - First  
HackIllinois - Best Use of Intel's Microcontrollers - Third  
JP Morgan Chase Code for Good - Best overall commit  
HuskieHack - CDK Evolution Award, Beyond the Assembly Line  
WildHacks - Watchdogs 2 Device Security Award (MLH Sponsored)

