Ethan Russell

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SUMMARY

Creative, self motivated, and passionate engineer intrinsically driven to dream up and produce things the world has never seen before.

EDUCATION

UNIVERSITY OF PUGET SOUND
B.S. in Computer Science
Graduated May 2017 | Tacoma, WA

SKILLS

Embedded Software Development (C, C++, STM32)
PCB design and layout (Altium)
Software programming (Java, Qt, .Net/C, Go)
Power electronics and motor control
CNC/manual machining
Linux/Unix

OTHER INTERESTS

Computer Graphics (Blender, Photoshop, After Effects, Premiere)
Photography, Videography
Outdoor activities: Skiing, Rock Climbing

WORK EXPERIENCE

FREEFLY SYSTEMS | Robotics Engineer
July 2017 - June 2022 | Woodinville, WA

- Involved in system+electrical design and software development. Products include:
  - *Astro*, a drone aimed at industrial applications: Electrical design, firmware development, and validation of a high reliability field-oriented brushless motor drive.
  - *Industrial gimbal drone payload*: Owned the electrical and software design and development, and production processes for a new gimbal framework, and PX4 aircraft integration for Astro.
  - *MoVI Carbon*, a 5-axis gimbal: Developed control system using the onboard ARM-M4/F7 STM32 series processors and implemented software support for the existing ecosystem: MoVI controller, MoVI Wheels
  - *Alta X*: Motor telemetry module: in response to a crash and recall, reverse-engineered a protocol for proprietary off-the-shelf motor drives and developed an electrical and software package for communicating with the aircraft.
  - *MoVI Pro* Owned firmware development of MoVI Pro and controllers including a major software revamp that introduced many new features for existing customers

UNIVERSITY OF PUGET SOUND | Science Support Engineer
Sep. 2013 - May 2017 | Tacoma, WA

- Supported the sciences at UPS by designing and maintaining research equipment
- Projects include:
  - *String winder:* designed, fabricated, and programmed a computer controlled guitar string lathe for a research project, and the supporting equipment and software for analysis. Co-authored paper with findings.
  - *Nitrogen Generator:* designed, fabricated, and programmed a computer controlled pressure-swing-absorption system for replacing nitrogen dewars in the UPS Chemistry department
  - *CNC Plasma Cutter:* built a CNC plasma cutter for use in the machine shop

DIGIWEST, LLC | Engineer/Technician
Summer 2014 | Portland, OR

- Involved with assembly, development, testing, and packaging of the Digiwest BlueMAC traffic data collector hardware
- Found a critical bug in software that caused excessive power draw. Modified existing design to use smaller batteries/solar panels
- Designed and prototyped a version of the BlueMAC product for use in NEMA TS2 cabinets

FIRST | Technical Mentor
Fall 2012 | Portland, OR

- Worked with high school students to help them design, manufacture, program, and test a 120 pound robot for the 2012 FIRST Robotics Competition

MENTOR GRAPHICS | Software Development Intern
Summer 2011 | Wilsonville, OR

- Built a FIRST robotics system simulator built on top of Mentor Graphics' Systemvision Software package
- Used VHDL-AMS to model mechanical, electrical, and Labview software systems as a tool for students to test software before a working FIRST robot was built

ROUTEWARE, INC. | Special Product Engineer/Consultant
Fall 2011 | Beaverton, OR

- Designed, programmed, prototyped, and mass-produced a human-interface device built into garbage trucks to decrease touch-screen wear