brad@ohwowneat.site
502-533-9013

Brad Luyster

1012 Payne Street
Louisville, Kentucky 40204

Education

University of Louisville   2009 – May 2011

Master of Engineering, Electrical and Computer Engineering.
Thesis Topic: A Prototype Security Hardened Field Device for SCADA Systems.

University of Louisville   2005 - 2009

Bachelor of Science in Electrical and Computer Engineering. Highest Honors.

Experience

Techshot: Electrical Engineer   September 2012 – Present

Responsible for multi-disciplinary roles on small project teams developing new products and technologies for customers including the DoD, DARPA, NASA, and commercial enterprises. Served as lead electrical and firmware engineer on NASA spaceflight Payloads.

Duties included circuit design, layout, assembly, test, and design for manufacture; embedded systems programming; desktop programming; product verification and certification to NASA/DoD/industry standards; and new business development, including grant writing and project management. Worked extensively with mechanical and software engineers to design integrated systems to meet the needs of crewed spaceflight, military, and more.

Developed software, hardware, and procedural systems to drive down the cost of building customized equipment across research areas including fruit fly genomics, materials science, marine biology, and stem cell research.

Honeywell: Software Engineer I   May 2011 – September 2012

Performed research and development of mass notification and fire safety products. Led a team developing devices for interfacing Honeywell systems with competitors and partnering companies, for a 5 year estimated ROI of $350,000. Worked extensively with engineers from outside Honeywell to develop products meeting open standards.

University of Louisville: Research Assistant   January 2010 – May 2011

Research Assistant in the Electrical and Computer Engineering Department's Intelligent Systems Research Laboratory. Investigated and developed methods for securing SCADA Remote Terminal Units using verified Microkernel operating systems on low power embedded processors.

Publications and Speaking

"A Prototype Security Hardened Field Device for Industrial Control Systems," International Conference on Advanced Computing and Communications Proceedings, Orlando, Florida, September 2010.

Technical Editor, "JavaScript on Things: Hardware for Web Developers," Lyza Danger Gardener, Manning, 2017.

"Building Complex Systems for SPAAACE," Hackaday Supercon 2018.

Leadership

LVL1 Makerspace: President   January 2013-January 2015

Founder, served four total years on the board of directors of a 501c3 non-profit hacker/makerspace. While president, succeeded in raising paying membership from 50 to 75, raising over $35,000 in grant funding, and relocating the organization to a newly renovated 8,800 square foot facility.

Louisville Mini Maker Faire   May 2012-May 2018

Served as Vice President of Kentucky STEAM Engine LLC, a 501c3 non-profit currently organizing the Louisville Mini Maker Faire (and other STEAM Education-related events). Organized and managed aspects of the Faire from its inception, through 4 successful events (attendance has ranged from 7,000-10,000+). The Makerfaire has become the region's premier public event for showcasing the work of local makers, inventors, and young makers to a broad range of Louisvillians.

Skills:

1- Learner	2- Competent	3- Proficient	4- Advanced	5- Expert

Programming

Skill	Rating	Skill	Rating	Skill	Rating
C	■■■■□	C++	■■■■□	C#	■■■□□
Python	■■■□□	JavaScript	■■□□□	HTML/CSS	■■□□□
SQL	■■□□□	ARM Assembly	■■□□□	AVR Assembly	■■□□□
Rust	■■■□□	GoLang	■■□□□	VHDL	■□□□□

Compilers/IDEs: GCC, Visual Studio, AVR Studio, Xilinx ISE, Git, Jira.

Operating Systems

Skill	Rating	Skill	Rating	Skill	Rating
Linux	■■■■■	Windows	■■■■■	FreeRTOS	■■□□□
Embedded Windows	■■■□□	Zephyr	■■□□□	OKL4/SeL4	■■■□□

Software

Skill	Rating	Skill	Rating	Skill	Rating
Diptrace	■■■■■	KiCad	■■■□□	Altium	■■□□□

Others: Microsoft Office, Enterprise Architect, AutoCAD, SolidWorks, LTSpice, Matlab.

Embedded Technologies

Skill	Rating	Skill	Rating	Skill	Rating
Atmel AVR	■■■■■	Risc V	■□□□□	MSP430	■■□□□
ARM Cortex Mx	■■■■□	PIC	■■■□□	HC11	■■■□□

Others: Low-level USB design, CAN, SATA, High Efficiency SMPS design.

Miscellaneous

Skill	Rating	Skill	Rating	Skill	Rating
Project Management	■■■□□	Public Speaking	■■■■□	Technical Writing	■■■■□
Analog Circuit Design	■■■□□	Digital Circuit Design	■■■■□	Grant Writing	■■■■□

Other Skills: Fine-pitch surface mount soldering, design for manufacture, six-sigma green belt, design for testability, UL testing, FCC testing, FDA testing, general EE lab tooling, small motion control systems, Milspec/NASA spec EMI/EMC design and testing, Milspec/NASA spec vibration/environmental design and testing.

Personal

Homebrewing (all-grain 5/10 gallon batch sizes, focus on Belgian farmhouse styles and mead), gardening, calligraphy, woodworking, amateur radio, and cooking.