Bryan **Orabutt**

CONTACT

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SKILLS

PROGRAMMING

C • Python • MATLAB • C++
OTPL • Verilog • VerilogA
Assembly • JSL

TOOLS

Cadence IC Tools • KiCAD
Calibre DRC/LVS/PEX • Git
LTSpice • JMP • Visual Studio

EMBEDDED PLATFORMS

Arduino • PSoC • Raspberry Pi
Beaglebone • ESP32

EDUCATION

WASHINGTON UNIVERSITY IN ST. LOUIS

MS in Computer Engineering
May 2022| St. Louis, MO

SOUTHERN ILLINOIS UNIVERSITY EDWARDSVILLE

MS in Electrical Engineering
August 2018 | Edwardsville, IL

BS in Computer Engineering
December 2015 | Edwardsville, IL

INTERESTS

I am an engineer at heart and love to make things. I enjoy embedded programming, circuit design, and 3D printing.

You can also often find me playing board games and table top RPGs with friends, or out foraging for wild mushrooms.

EXPERIENCE

INTEL | Product Development Engineer

Jan 2022 - Present | Hillsboro, OR

- Developed OTPL test programs for sorting singulated die. Collected and analyzed data for performing failure mode analysis and feeding back into the foundry for process improvements.
- Developed a python script to automate OTPL test plan generation for concurrent IP testing, reducing test time across multiple products.
- Took charge of investigation of anomalous measurements resulting in new testing standards being implemented for specific product families.

RESEARCH

WUSTL RADIOCHEMISTRY LAB | Doctoral Research

Jan 2019 – Jan 2022 | St. Louis, MO

- Worked with **Dr. Roger Chamberlain** and **Dr. Lee Sobotka** to develop Verilog-A models to simulate new mixed-mode pulse processing electronics.
- Developed offline error correction algorithms for mixed-mode particle identification circuit.
- Supported the design and simulation of new iterations of existing pulse processing ASICs for particle identification and energy measurement.
- Designed software in C and MATLAB to facilitate test and characterization of packaged pulse processing ASICs prior to use in experiments.

SIUE VLSI DESIGN LAB | Master's Research

Jan 2016 – August 2018 | Edwardsville, IL

- Worked with **Dr. George Engel** to develop a new analog ASIC for detecting the onset of radiation at a scintillator detector.
- Engaged in all aspects of the development: from design, schematic entry, simulation, layout, and final testing of the packaged silicon.

ACADEMIC PROJECTS

ML ACCELERATOR | Cadence Encounter, Verilog, C

Washington University in St. Louis

- Designed a machine learning accelerator for the MNIST data set comprised of multiple pipelined multiply accumulator units with an input/output RAM.
- Wrote a C program to model and train the neural network, obtaining the weight matrices for testing the accelerator design.

REAL-TIME GPIO INTERRUPT | Raspberry Pi, C, Linux, PSoC

Southern Illinois University Edwardsville

- Developed a project to reduce IRQ latency on the Raspberry Pi GPIO using a kernel driver and user space library.
- Wrote a C user spaace library that performed blocking reads on a character device, executing a callback when finished.
- Wrote a C linux kernel driver that implemented a real-time FIFO to schedule IRQ handlers for each GPIO request and writing to a character device.

PUBLICATIONS

[1] B. Orabutt, R. D. Chamberlain, J. Elson, G. Engel, F. Delaunay, and L. G. Sobotka. Design of mixed-mode systems for pulse-shape discrimination. In *2021 IEEE International Midwest Symposium on Circuits and Systems (MWSCAS)*, pages 990–994, 2021.