

EDUCATION

Master of Science, Electrical Engineering <i>Portland State University</i>	GPA: 4.00 / 4.00	Jun 2019 – Jun 2021 Portland, OR
Bachelor of Science, Electrical Engineering <i>Portland State University</i>	GPA: 3.97 / 4.00 <i>Summa cum laude</i>	Sep 2017 – Jun 2020 Portland, OR

WORK EXPERIENCE

Design & Development Engineer I <i>Micro Systems Engineering, Inc.</i>	Dec 2020 – Present Lake Oswego, OR
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- Equipment owner for two automated UV laser depaneling systems used to process all PCBs in production. Replaced \$160K laser source within first 6 months on the job, upgraded \$80K conveyance system within first 10 months.
- Leading equipment purchasing and process introduction project for additional laser systems. Put in \$770K total PO for two automated laser systems within first 7 months.
- Manage production issues and engineering requests for laser equipment. Generate cut programs based on customer spec and IPC standards, investigate manufacturing defects and RMAs.
- Plan and organize projects, communicate tasks to production and technical specialists, and frequently present to groups of 5 or more engineers.

Production Specialist III <i>Micro Systems Engineering, Inc.</i>	Dec 2016 – Dec 2020 Lake Oswego, OR
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- Updated, verified, and released LabVIEW software changes for a program used to control multiple automated imaging robots that processes 1000 – 1500 medical devices daily.
- Physically rewired and rebuilt 2 automated imaging robot cells that are used to process 300 medical devices each, daily.
- Performed LabVIEW code review for senior engineer on software used to monitor production equipment.
- Trained an Epson 6-axis robot arm to process 3 new medical devices for production.

SKILLS

• C++ / C	• LabVIEW 13.0	• SystemVerilog
• Embedded Rust	• ARM / RISC-V Assembly	• Oscilloscopes
• ADC, SPI, I2C, JTAG	• Soldering	• Git (Github)

RELEVANT PROJECTS

High Assurance Self Balancing Robot - Senior Capstone	Jan 2020 – Jun 2020
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- Programmed a self-balancing robot to explore complex methods of control and formal verification. Created a website with an SQL database to provide a live feed of robot sensor data.
- Altered a compiler in a verification tool called Kind2 to generate embedded Rust code from a verifiable language called Lustre.
- Used the modified compiler to generate an embedded Rust PID controller and Fuzzy logic controller. Found Rust PID to be within 5% of a controller written in C++ for most characteristics.

RISC-V System-On-Chip Projects	Oct 2020 – Dec 2020
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- Modified a RISC-V Swerve EH1 processor written in SystemVerilog and to interact more I/Os, VGA displays, and internal busses. Wrote assembly code used by the processor.
- Helped multiple other students troubleshoot their project after completing mine. Teacher's assistant used my code to teach other students how to implement the project.

MIPS-lite Simulator	Apr 2020 – Jun 2020
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- Designed a 5-stage pipelined MIPS simulator in C++ with timing analysis, hazard mitigation, and forwarding. Evaluated the simulator with a memory image provided by professor.

- Utilized ARM bare metal assembly and C to program a BeagleBone Black board to communicate with an RC8660 talker board over UART and a NewHaven LCD over I2C.
- Used datasheets and pseudo code to identify and plan modifications for peripherals. Implemented all necessary features using interrupts.

RELEVANT COURSEWORK

Computer Architecture • **Microprocessors 1 & 2** • ASIC: Modeling & Synthesis • **Digital IC Design** • Analog IC Design • **Formal Verification** • System-On-Chip