

Thomas V. Gaul

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Objective: Seeking full-time position developing FPGAs, Digital ASICs, firmware, and/or embedded systems

Education

Iowa State University - Ames, IA
Computer Engineering

Bachelor's May 2024: GPA: 3.99
Master's May 2025: GPA: 4.0

Employment

Quantum Firmware Intern

(Summer 2024)

IBM - Rochester, Minnesota

- Implemented regression testing for an existing codebase in Pytest to identify and debug issues
- Analyzed regression test results and communicated findings to firmware developers
- Enhanced a test suite by integrating dynamic JSON configuration files for improved flexibility and efficiency

Operating Systems Teaching Assistant

(Spring 2024)

Iowa State University - Ames, Iowa

- Led labs in learning operating systems principles, assisting students in debugging multi-threaded C programs

Firmware Development Intern (IBM Z Mainframe)

(Summer 2023)

IBM - Rochester, Minnesota

- Wrote and ran timing tests validating solutions for clearing large memory segments
- Created tests to verify the functionality of code in preparation for release
- Debugged problems encountered in simulation, testing platforms, and in the field
- Designed and implemented test code to validate the functionality of ported firmware in C++

Manufacturing Electrical Engineer Co-Op

(January 2022 - August 2022)

Collins Aerospace - Bellevue, Iowa

- Reverse-engineered and redesigned obsolete test equipment
- Troubleshoot errors found from testing circuit boards based on error codes, schematic, and component datasheets
- Developed code to arrange and compile test data for analysis in Java

Electrical Engineering Intern

(Summer 2021)

Weiler Manufacturing - Knoxville, IA

- Designed, built, and audited wiring harnesses for heavy equipment
- Prepared troubleshooting processes and documentation for field service technicians

Leadership and Activities

Senior Design Team Lead

(2023-2024 Academic Year)

- Designed hardware and software for a testbed for a distributed batteryless sensor node network
- Devised network of isolated test nodes monitoring life cycle and transmission of batteryless sensor nodes
- Managed client-team relations, project schedule, team meetings, and tracked deliverables to achieve objectives

PrISum Solar Car Team

Electrical Team Advisor

(2023-Present)

Electrical Director

(2022-2023 Academic Year)

Assistant Electrical Director

(2021-2022 Academic Year)

- Managed electrical projects and led team meetings
- Tested and troubleshoot board hardware and the entire system
- Led new member recruitment, onboarding, and retention of 10 new members

Skills

Programming - Java, C++, C, VHDL, Python, Pytest, Verilog, Arduino, MatLab

Software - Autodesk Inventor/Solidworks, KiCAD/Altium Designer, Adobe Premiere Pro, AutoCAD

Other - System Debugging, Soldering, 3D Printing, Woodworking, Automotive Maintenance

Other Activities and Achievements

St. Thomas Aquinas Live Stream
Tau Beta Pi Honor Society
Eagle Scout Troop 373 (Age 14)

ISU Dean's List - All Semesters
President's Leadership Class 2020
Honors Program/ Freshman Research