

Thomas V. Gaul

(641) 780-5534 | tvgaule@iastate.edu

Education

Iowa State University - Ames, IA
Computer Engineering; GPA: 3.98

Anticipated Bachelors May 2024
Anticipated Masters May 2025

Employment

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
- Assisted in debugging 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 circuit boards for errors found in testing
- Analyzed data for pervasive issues in manufacturing
- Developed code to arrange and compile test data for analysis in Java
- Optimized test cell layout and 5S improvements

Electrical Engineering Intern

(Summer 2021)

Weiler Manufacturing - Knoxville, IA

- Designed and built wiring harnesses for heavy equipment
- Audited harness designs and implemented corrective actions
- Prepared troubleshooting processes and documentation for field service technicians

Leadership and Activities

Electrical Team Advisor

(2023-Present)

Electrical Director

(2022-2023 Academic Year)

Assistant Electrical Director

(2021-2022 Academic Year)

PrISUm Solar Car Team

- 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
- Electrical Lead FSGP 2022
- Qualified for American Solar Challenge (2022) for the first time in the car class for Iowa State

Projects: Lighting and Horn Board: PCB design, layout, fabrication, and debugging

Benchtop Power Supply: debugged, designed, and layout revisions

Wiring Harness: documented, upgraded, expanded upon, and debugged

Critical Tinkers

(Fall 2020-Spring 2022)

Projects: Speaker Case Redesign and Upgrade: Designed and printed case, specced and upgraded LED lights

RGB Matrix Arduino Shield: PCB design, fabrication, programmed, debugged hardware and code

LED Backlight Sign V2: programmed Arduino and app to control individually addressable LEDs

Skills

Programming - Java, C++, C, Arduino, MatLab, Python

Software - Altium Designer, Autodesk Inventor, Solidworks, 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