

# Zane Richards

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## EDUCATION

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### The University of Tulsa

Bachelors of Science in Electrical Engineering  
Bachelors of Science in Computer Engineering

Expected May 2027, Major GPA: 3.90

## WORK EXPERIENCE

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### USSS National Computer Forensics Institute Lab

Hardware Engineering Intern

August 2025 - Present

- Designed a battery protection PCB that maintained continuous power to the load and monitored battery health.
- Saved tax payer \$500k per law enforcement site with implementation of new design
- Integrated ICs to deliver a versatile PCB with millivolt-level voltage control.
- Reverse-engineered high-speed CPUs and communication ICs using digital-design expertise.
- Built stakeholder presentations that clarified scope for non-technical audiences and captured technical feedback from cross-functional partners.

### ABB

Hardware Engineering Intern

May 2025 - August 2025

- Contributed to the design of high-precision measurement circuits for natural gas chromatograph devices, meeting strict accuracy requirements.
- Designed a hardware test platform that used analog circuits to recreate detector signals.
- Shrank board-level test cycles from 30min to 1min (-97%), saving \$23k per year in testing fees.
- Implemented a hard-reset circuit in a legacy embedded system, enabling \$15M in projected lifetime revenue.
- Wrote Verilog FPGA code to introduce a manual reset pathway and interface with voltage-supervisor ICs, improving system recoverability during fault events.

### Ten Nine Technologies

Electrical Engineering Intern

January 2024 - May 2025

- Developed battery testing devices, enhancing process efficiency and improving battery performance reliability.
- Resolved critical issues in electronic equipment, reducing downtime by 30% and enhancing system reliability.
- Programmed Python data-processing code, reducing time to process results by 75%.

### Design Dla LLC

Software Engineering Intern

January 2022 - May 2023

- Led development of custom Java-based tooling for school admissions.
- Streamlined application workflows, achieving 200% time savings and reducing costs.

## LEADERSHIP EXPERIENCE

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### The University of Tulsa

Institute of Electrical and Electronics Engineers (IEEE) Junior Representative

August 2024 - Present

- Led professional development workshops on practical skills like resume writing and soldering.
- Secured participation from a wide range of industry professionals for networking events.
- Increased the ECE students industry internship opportunities.

## SKILLS & PROFICIENCY

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- **Professional Skills:** Leadership & team building, sales & customer service, presenting & public speaking, time management, project management, technical writing & review, product testing, market research, independent research
- **Software:** FPGA programming (Verilog & VHDL), Altium Designer, LTSpice, MathWorks (MATLAB, Simulink, Simscape), SOLIDWORKS, Fusion 360, Autodesk Inventor, Python, C, Bash, Windows, iOS, iPadOS, macOS, LaTeX, Microsoft Office 365, Google Professional Suite, Git, KiCAD
- **Technical:** LPKF PCB Proto Lab, RTL design, Hardware reverse engineering, Raspberry Pi, Arduino, STM32, electrical wiring, soldering, spectrum analyzers, multimeters, network analyzers, Revit