Isabella Nicole Zaens

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EDUCATION

The University of Texas at Austin August 2022 - May 2026
B.S. Electrical and Computer Engineering, Honors Program

Relevant Coursework
Upcoming Fall 2024: Algorithms, Linear Systems and Signals, Advanced Calculus for Applications II
Completed: Software Design and Implementation (Honors), Data Structures, Computer Architecture, Circuit Theory (Honors), Embedded Systems (Honors), Digital Logic Design, Probability and Random Processes (Honors), Discrete Mathematics, Linear Algebra, Differential Equations

EXPERIENCE

Product Test Engineering Intern, AMD (Austin, TX) May 2024 - August 2024
- Conducted system-level testing for next-generation Radeon GPUs, ensuring functionality and performance standards
- Debugged and characterized products to assess performance, process, and test sensitivities
- Performed yield analysis using industry-standard tools to support yield debug and failure analysis
- Developed multiple scripts and tools to automate release notes generation and publication

Research Assistant, ReNeu Robotics Lab September 2023 - Present
- Developed embedded software for an EMG-driven hand exoskeleton that aids in spinal cord injury rehabilitation
- Optimized performance of data acquisition system using C++, EtherCAT, ESI, and SOEM
- Created documentation and wiring diagrams to help build a new exoskeleton in collaboration with Sony
- Developing a new version of the exoskeleton by researching and integrating advanced hardware and software

Electrical Engineer, Texas Battlebots League January - April 2023
- Collaboratively developed a full-body spinner robot for combat competition
- Designed and implemented the robot's electrical system using Arduino Uno Rev3 microcontroller
- Integrated various control system elements, including ESC, RC controller, power supply, motors, and remote kill switch

PROJECTS

Two-Player Space Invaders
- Developed a two-player Space Invaders game on a TM4C microcontroller using C++ and ARM assembly
- Implemented version control and peer-programming techniques for code efficiency and collaborative development
- Designed custom game controller PCB, sampled analog joysticks (ADC), displayed on LCD
- Incorporated interrupts for dynamic sound effects, outputted through DAC

Plagiarism Catcher
- Developed a C++ plagiarism detection program using k-shingling and mapping techniques to achieve high accuracy
- Utilized hashtable, map, and vector containers to handle large files efficiently
- Conducted comprehensive testing, execution, and debugging on Linux environments

Inventory Management System
- Developed a Java inventory management system with predictive algorithms for demand and supply chain optimization
- Analyzed data using statistical models to predict monthly revenue run rate and provide strategic insights
- Designed a graphical interface with interactive data visualization elements using JavaFX

SKILLS AND CERTIFICATIONS

Software: C/C++, Java, Python, Verilog, ARM Assembly, MATLAB, SQL, R, HTML/CSS, Javascript, Tableau
Hardware: Oscilloscopes, AD2 Waveforms, PCB Design
Tools: Unix/Linux, Keil, VSCode, Vivado, KiCad, EAGLE, AutoCAD, Fusion 360
Certifications: Google Data Analytics, IBM AI Foundations