Alec Izett

Tulsa, OK

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EDUCATION

The University of Tulsa – *GPA: 3.3/4.0* **| Tulsa, OK**   *Expected May 2024*

Bachelor of Science in Computer and Electrical Engineering

- *Relevant Coursework:* Object-Oriented Software Development, Circuits, Power, Electronics, Embedded Systems, Data Structures & Algorithms, Logic, Discrete Mathematics, and Solid State Semiconductors.

SKILLS

Languages: C#, C, Java, Python, MATLAB, TeX

Software: Simulink, Simscape, LTSpice, Autodesk Inventor, LaTeX, MARS MIPS, FL Studio, Davinci Resolve, JIRA

Tools & Technologies: Soldering, 3D Printing, STM Boards, NUnit .NET framework, Agile, Scrum

EXPERIENCE

FlightSafety International | St. Louis, MO   *Summer 2023*

Software Engineering Intern

- Improved simulator efficiency by 2 hrs /projector/yr by redesigning C# alignment algorithm
- Coded unit tests with NUnit .NET framework in a test-driven development environment
- Conducted legacy code refactoring

The University of Tulsa | Tulsa, OK   *Summer 2022*

TU Undergraduate Researcher

- Developed a fully functional RFID card scanner system in C
- Integrated sensor functionality using an STM32 F746zg board
- Meshed operational buck converter with the F746 program

PROJECTS

Audio Amplifier

- Designed a common emitter BJT amplifier for a 200Hz to 20kHz frequency range
- Calculated high-frequency and low-frequency capacitor values by hand
- Validated circuit design through simulations in Simscape
- Performed practical testing in the lab using AC power supplies and oscilloscopes
- Documented the entire design process using LaTeX

ENIAC in C & low-level MIPS Assembly

- Developed a C-based implementation of the Electronic Numerical Integrator and Computer (ENIAC)
- Translated C programs into assembly language utilizing a MIPS language emulator
- Employed a Taylor Series expansion for the computation of an arcsine function in assembly

Oscillator on the STM32 F411RE

- Programmed a C-based waveform generator on the F411RE programmable board for an audible musical oscillator
- Constructed a physical amplifier circuit with ICs and capacitors to drive a speaker and produce sound
- Fine-tuned the oscillator within the equal temperament tuning system
- Coded a 4x4 matrix keypad input to allow users to select desired notes to play
- Utilized the STM32Cube IDE to interface with hardware features

Arithmetic Logic Unit (ALU)

- Developed an 8-function Arithmetic Logic Unit (ALU) using MATLAB for integration into Simulink
- Implemented D Flip-Flop banks and logic block decoding using Gray Code
- Created and edited instructional videos explaining and demonstrating various projects

OTHER ACTIVITIES

Activities: Secretary of the Student Finance Association

Hobbies and Interests: Business, Personal Finance, Automotive Industry, Music Production, Photography