Mina Gawargious

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EDUCATION

The University of Texas at Austin | Electrical and Computer Engineering
Bachelor of Science | GPA: 3.21 | Focus: Computer Architecture & Embedded Systems **May 2021**
Master of Science | GPA: 3.24 | Focus: Architecture, Computer Systems, & Embedded Systems **May 2023**

Coursework: Computer Architecture | Microarchitecture | Operating Systems | Real-Time Operating Systems | Embedded Systems Design Lab | Digital Logic Design Using Verilog I & II | Software Design I & II | Algorithms | High Speed Computer Arithmetic | Data Science Lab | System-on-Chip Design | Embedded IoT | Cross-Layer Machine Learning Algorithm/Hardware Co-Design | Multicore Computing | VLSI I | Parallel Computer Architecture | Integrated Circuit Nanomanufacturing | Computer Architecture Prediction Mechanisms | Semiconductor Optoelectronic Devices

EXPERIENCE

Digital Design Engineering, *Silicon Labs* **May 2023-Present**
- Refined Energy Management Unit to improve temperature compensation for signal and RAM voltage references

Digital Design Engineering Intern, *MediaTek* **January 2023-May 2023**
- Drove RTL Lint cleaning process using Synopsys Spyglass Lint
- Ensured Clock-Domain-Crossing properly checked using QuestaCDC
- Automated lint waiver generation and sped up RTL design and verification with Perl, Python, and Bash Scripts

Digital Design Engineering Intern, *Silicon Labs* **August 2022-December 2022**
- Worked on energy management using SystemVerilog and Unified Power Format
- Learned industry-standard tools and methodologies such as Perforce, Cadence Virtuoso, and UVM

Systems Engineering Intern, *Silicon Labs* **May 2022-August 2022**
- Created React Native app and PyQt5 GUI to significantly speed up radio testing

Graduate Research Assistant, *Mobile and Pervasive Computing Lab at UT Austin* **September 2021-May 2022**
- Created React Frontend for testing of opportunistic machine learning on Raspberry Pis

Tutor, *Varsity Tutors* **May 2020-September 2021**
- Tutored students from middle school to college in Algebra, C, C++, Python, Java, and ACT & SAT Math

PROJECTS

Microarchitecture Project - Verilog:
- Worked in a team of 3 to design a 7-stage pipeline implementing part of Intel's x86 IA-32 ISA in structural Verilog.
  - Personal role: designed writeback cache, instruction-length decode logic, and part of bus architecture.

Operating Systems Labs - C:
- Worked with a partner to add support for user programs, virtual memory, and an improved file system with support for subdirectories and file growth to the Pintos Operating System.
  - Learned to manage, update, and debug large prewritten codebase with 30,000+ lines of code across 50+ files by using GDB and git.
- Built Unix shell in C to accept and execute Unix commands, with support for file redirection, piping, job control, and backgrounding and foregrounding processes.

Real-Time Operating Systems Labs - C, ARM Assembly:
- Worked with a partner to write an operating system for the TM4C microcontroller, with round-robin and priority scheduling, a basic shell, a file system using indexed allocation, and network support using TCP/IP.
  - Personal role: wrote the scheduling algorithms and majority of file system.

Chat Program - Java - https://github.com/MinaGawargious/ChatProgram**:**
- Created chat program in Java, with ability to send text and images to groups with any number of members.
  - Learned JavaFX, socket programming, multithreading, semaphores, and the observer design pattern.

RELEVANT SKILLS

Languages: C, C++, Java, Perl, Python, JavaScript, Verilog, ARM Assembly
Hardware: Oscilloscopes, Logic Analyzers, PCB Design
Frameworks: React, React Native