

SOFTWARE PROJECTS

Task Scheduler

- Built a custom task scheduler utilizing a round-robin algorithm to manage multiple user-defined tasks efficiently in a bare-metal environment for the STM32F4 microcontroller.
- Leveraged ARM Cortex-M system exceptions (SysTick Timer and PendSV) to perform context switching.
- Developed microcontroller startup code and linker scripts from scratch, utilizing understanding of memory mapping and the embedded system build pipeline.

Embedded Keypad Driver

- Designed and implemented a bare-metal driver for a 4x4 matrix keypad on an STM32 microcontroller.
- Utilized row-column scanning technique to efficiently detect keypresses in the absence of an RTOS.
- Implemented software debouncing logic to ensure accurate key detection and reduce false triggers.

RISC-V Decoder

- Developed a RISC-V object file decoder in C to translate binary object files into ASCII memory initialization files for simulation and hardware loading.
- Implemented a control signal extraction function that decodes 32-bit RISC-V instructions and identifies control signals such as ALU operation, register write, and memory access controls.

Masters Nationals Scheduling Website

- Engineered a full-stack web application to manage dynamic team lineups, replacing a manual Google Sheets workflow with a scalable, structured system built using SvelteKit, JavaScript, and MS SQL.
- Assessed architectural trade-offs and system requirements to design a robust front-end/back-end interface supporting real-time data updates.

PROFESSIONAL EXPERIENCE

Appian Corporation

McLean, VA

Technical Support Engineer

August 2024 – Present

- Troubleshoot and resolve IPSec-related connectivity issues by analyzing logs and collaborating with customers to ensure networking protocol requirements are met.
- Enhanced an existing alert monitoring interface for customer sites by integrating real-time performance metrics, reducing system triage time for degraded sites by 76%.
- Coordinate with customers and engineering teams to communicate technical requirements and ensure smooth transitions during infrastructure migration projects.

EDUCATION

University of Pennsylvania, School of Engineering & Applied Science

Philadelphia, PA

Bachelor of Applied Science

May 2024

Major: Computer Science

GPA: 3.56/4.0

Relevant Coursework: Embedded Systems Programming; ARM Cortex M3/M4 Processors; Computer Organization & Design; Computer Architecture; Computer & Network Security; Programming Languages & Techniques; Human Computer Interaction

SKILLS

Software: Embedded C, C/C++, Python, Verilog

Hardware: STM32, ARM, Arduino, ESP32

Protocols: I2C, SPI, UART, USB

Technical: Git, Networking, VPN, Bash, Linux, Docker