Jackson Luna-McCrocklin

2891 Snowdrop Dr., West Lafayette, IN | (812)-243-4336

jklmcc56@gmail.com | LinkedIn | GitHub | Portfolio

Education

Bachelor of Science in Computer Engineering, Purdue University **Aug 2020 – May 2024**

Minor in Management

3.44 GPA

Projects

Interactive Digital Role-Playing Game Board **Oct 2023 – June 2024**

- Prototyped an infinitely customizable electronic game board that reduces the workload of the DM and the learning of curve for players that creates a unique experience not seen in any product currently on the market.
- Designed and developed the PCB, firmware, and packaging, incorporating KiCAD, STM32 microprocessor programming principles, and CAD to create a cohesive product that catches consumer attention.
- Created the system requirements and helped debug the Unity-based companion application for customizing and exporting maps and characters to the game board.

UNIX Operating System **Jan 2024 – May 2024**

- Implemented advanced memory management techniques, including segmentation, paging, and virtual memory to optimize system performance and resource utilization.
- Improved file system efficiency and access scheduling through use of algorithms specified for block-structured storage management.

Java-Based Compiler **Aug 2023 – Dec 2023**

- Developed a C language to RISC-V Assembly compiler in Java from scratch, utilizing parsing and ASTs to read and convert the code.
- Optimized the compiler utilizing computer architecture techniques, specifically in limitations regarding register allocation and memory access speeds.

Embedded Systems Audio Player **Mar 2022 – May 2022**

- Programmed an STM32 microprocessor in C to develop a user-interactive audio player, allowing for .wav files to be imported and played on a speaker.
- Installed buttons for user manipulation of selecting and replaying songs, using an LCD to display result of manipulation, all wired on a breadboard.

Relevant Coursework

- Microprocessor Systems and Interfacing
- Object-Oriented Programming
- Operating Systems Engineering
- Introduction to Compilers and Translation Engineering
- Introduction to Digital Design
- Circuit Analysis

Skills

- Programming: C, C++, Python, Java, RISC-V Assembly, ARM Assembly, OpenGL, System Verilog, MATLAB
- Embedded Systems: SPI, I2C, UART, DMA, DAC, ADC
- Software: KiCad, AutoCAD, STM32CubeIDE, System Workbench, git
- Hardware Development: PCB design, testing, soldering
- Technologies: Oscilloscope, Multimeter, Waveform Generator
- Debugging Tools: Valgrind, GDB