

James Kiarie

SOFTWARE ENGINEER

Profile

Recent computer science graduate with a strong fascination for delving deep into low-level systems, embedded tech, and IoT. Excited to put my skills in Rust, C, C++, and RISC-V to work on real-world projects in these exciting areas. I've explored the power of WebAssembly (Wasm) as a deployment option in embedded and bare-metal contexts, as demonstrated by my WASI-compliant kernel for RISC-V. I'm all about pushing the boundaries in software and systems programming.

Employment History

Web Developer, IMS GURU Ltd., Nairobi, Kenya

06/2022 - 09/2022

Worked at IMS as a web developer.

- Collaborated with a mentor to create three production-ready websites using HTML, CSS, and JavaScript.
- Enhanced SEO strategies to improve search engine rankings.
- Developed a comprehensive documentation website for a core product.
- Contributed to client onboarding processes.

Bank Teller, Equity Bank, Nakuru, Kenya

01/2019 - 08/2019

Participated in the Equity Leadership Program for seven months after completing KCSE and before beginning Computer Science studies.

Gained valuable communication skills and financial sector insights.

Education

BSc. in Computer Science, University of Nairobi, Nairobi

09/2019

Acquired a solid core Computer Science background that was mostly project-based.

Projects

Hobo Kernel (ongoing project), A partially WASI-compliant kernel written in Rust for the RISCV ISA.

Project website : <https://github.com/kiarie404/Hobo-OS/>

HOBO is a specialized kernel developed in Rust and RISC-V Assembly, targeting microcontrollers in IoT applications. Its primary purpose is to streamline the installation and execution of WebAssembly (WASM) modules on IoT devices. HOBO achieves this by exporting system calls using WebAssembly System Interface (WASI) prototypes and running WASM modules in Supervisor-mode. This approach enhances code portability and security within the IoT ecosystem, making it easier for developers to deploy and manage applications on a variety of microcontroller platforms.

Personal Details

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References

Harsha Mandapati from IMS Guru

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Links

Portfolio Website :
kiarie404.github.io

Github : [@kiarie404](https://github.com/kiarie404)

Skills

Low-Level Systems Development:
Proficient in developing drivers and mini-kernels for embedded systems. Doable in C/C++/Rust and Riscv, with Rust being the primary choice.

WebAssembly (Wasm) Integration:
Knowledgeable in using WebAssembly for off-browser applications, IoT, and embedded systems.

RISC-V Development: Experienced in working with RISC-V architecture, including porting and optimizing code for RISC-V chips.

Technical Documentation: Proficient in creating detailed technical and non-technical documentation.

Salesmanship: Yea... salesmanship