Alfred Jijo

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Profile

Motivated software engineering student specializing in system programming and low-level application development. Experienced in designing robust, high-performance software tools, libraries, and automation for Linux and Windows platforms. Adept at leveraging C, C++, and Python for systems integration, resource management, and hardware interfacing. Proactive problem solver with a strong attention to detail and a passion for code optimization, reliability, and developer tooling. Seeking opportunities to innovate on core system components, improve performance in large-scale environments, and deliver impactful solutions that drive engineering excellence.

Technical Skills

Languages:	C, C++, Python, PHP, Java, SQL, Go
Frameworks	JUnit
Hardware	Raspberry Pi, PiCamera, Serial Communications
Tools & Platforms:	Git, MySQL, JetBrains IDEs, Linux, Windows, Win32 API
Spoken Languages:	English - Fluent

Leadership Experience

Software Engineering Team (SET) — Liverpool John Moores University
Co-Lead (Project Hyperion) — Oct 2025 - Present

- Co-leading and mentoring a team of 18 student developers in a software/hardware environment.
- Guiding the design and development of an automated sky-monitoring and control system, integrating Raspberry Pi hardware, Pi Cameras, and remote server data transmission.
- Developed closed-loop feedback algorithms for device positioning and real-time calibration to maximize system accuracy and robustness.
- Worked with researchers to refine requirements and validate tracking and control logic in testing environments.
- Oversaw experimental deployment, system calibration, and hardware-software troubleshooting.

Projects

ASMR-Lang — HackNotts ‘25
CLI / Language Design — GitHub | Devpost

- Co-designed and prototyped an assembly-inspired programming language mapping program operations to generative audio with feedback logic.
- Applied compiler and interpreter theories for hands-on language implementation in a competitive, timae-pressured environment.
- Managed code/design contributions via Git, demonstrating rigorous collaborative engineering.

ccDB — C99 Project Template Personal Project
Build Tooling & Scaffolding Codeberg

- Architected a standardized C99 development scaffold featuring a portable, self bootstrapping build system (via `mate.h`) to eliminate complex Makefile/CMake dependencies.
- Implemented a modular "base" layer providing cross-platform logging and common utility headers, streamlining the setup of high-performance C applications on Linux and Windows.

Discord Timestamp Generator Personal Project
Native C & Win32 API GitHub

- Built a hybrid GUI/CLI utility in C for high-accuracy timestamp conversion and automation workflows.
- Designed event-driven and timing algorithms for performance sensitive scenarios; used, tested, and debugged by the wider community.

warden.h — C99 Memory Allocator Library Personal Project
Single-file Header, MIT License Codeberg

- Designed a modular, STB-style single-header library providing region-based memory management (Linear Arena) to optimize cache locality and achieve O(1) allocation performance.
- Engineered a polymorphic `WardenAllocator` interface with type-safe macros (`make`, `release`) to abstract implementation details and reduce void pointer casting errors.
- Implemented manual pointer arithmetic handling for strict memory alignment requirements, with support for custom memory backends (dependency injection) for embedded use cases.

Other Notable Projects

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csview.h — C99 CSV Library Personal Project
Single-file Header, MIT License GitHub

Maths Interperator Personal Project
Interprator, Python GitHub

dsa-lib Personal Project
Data Strucutre and Algorithims, Native C GitHub

Hotel Room Tax System University Coursework
Java Console Application Score: 93% (High First-Class)

UK Road Performance Data System University Group Project
Java Console Application / Agile Score: 73% (First-Class)

Education

Liverpool John Moores University Liverpool, England
BSc in Software Engineering Est. Graduation: June 2028

Key modules: Control Systems, Data Structures & Algorithms, Embedded & Real-Time Systems, Database Systems, Physics & Mathematics.

- First Year: Achieved First Class.

Cronton Sixth Form College Widnes, England
A-Level Computer Science, Mathematics & Physics Graduated: June 2024

Relevant modules: Data Structures & Algorithms, Computing Systems, Databases & SQL.