

# VIJU SANJAI

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## EDUCATION

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### Vellore Institute of Technology

Bachelor of Technology in Electronics and Communication (GPA: 8.16)

Chennai, TN

Aug 2023 – Present

## TECHNICAL SKILLS

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**Languages:** Java, C/C++, C#, Python, Rust, SQL, JavaScript/TypeScript

**Frameworks & Libraries:** .NET, Express.js, React, Tauri, WebGPU, PyTorch

**Cloud & Tools:** AWS, Cloudflare (R2, Edge), Docker, Git, Linux, Supabase, Vercel

**Concepts/Areas:** Data Structures & Algorithms, Object-Oriented Design, API Architecture, System Design

## EXPERIENCE

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### Lagoon Technologies

Software Development Intern

Chennai, TN

Sep 2024 – Feb 2025

- Engineered and optimized internal enterprise software tools utilizing **C# and the .NET framework** within an Agile environment.
- Conducted exploratory and architectural analysis of legacy systems, identifying structural bottlenecks to improve maintainability and accelerate release cycles.
- Collaborated in daily SDLC cross-functional discussions to align software architecture with enterprise scalability requirements.

## TECHNICAL PROJECTS

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### Share (Scalable Cloud Storage Service) | TypeScript, Hono, Cloudflare R2

Oct 2024 – Present

- Architected a scalable, real-time file-sharing platform capable of handling PDFs, text, and diverse video codecs.
- Engineered a globally distributed storage backend utilizing **Cloudflare R2** to ensure high availability and low-latency object retrieval.
- Developed robust, edge-optimized routing APIs using **Hono** and **TypeScript**, ensuring rapid deployment across the network edge.

### FFmpeg Performance Integration | Rust, WebGPU, WGSL, C, FFmpeg

Dec 2024 – Present

- Engineered a custom **hwcontext** for FFmpeg, enabling efficient GPU buffer management and zero-copy hardware-accelerated video pipelines.
- Ported complex Vulkan-based video processing filters into **WGSL** compute shaders for cross-platform execution.
- Leveraged **Rust** to safely interface with FFmpeg's legacy C-based architecture, heavily optimizing memory ownership and reducing CPU latency.

### Ed25519 Firmware Signer (Full-Stack) | Rust, React, Tauri, C/C++

Jun 2024 – Present

- Built a secure, full-stack desktop utility for cryptographically signing firmware binaries to embedded targets.
- Engineered a high-performance **Rust** backend to handle custom Intel HEX parsers and Ed25519 digital signature generation.
- Bridged the high-speed backend with a responsive **React** interface using **Tauri** Inter-Process Communication (IPC), maintaining exceptionally low memory overhead.

## LEADERSHIP & COMMUNITY

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- **Code Chef Developer:** Built and maintained the club's competitive programming challenge platform, utilizing **Express.js** and **Cloudflare** to handle scalable backend service requests.
- **OSPC Research Lead:** Mentored 50+ students on **Git** version control, collaborative software development practices, and core programming fundamentals.