

P V Jayaraman

Software Developer | Systems & Real-Time Applications

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PROFESSIONAL SUMMARY:

High-performance Software Developer specializing in real-time systems and AI architecture. Proven ability to engineer complex, optimized solutions from scratch ranging from **custom C-based language interpreters** to **AI orchestrators** with persistent contextual memory. Expertise includes optimizing low-latency communication via **WebSockets & WebRTC** and architecting scalable backends using **FastAPI** and **Node.js**.

EDUCATION:

- **Bachelor of Science in Computer Science | CGPA: 8.56 / 10.0**
Expected Graduation: 2027
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TECHNICAL SKILLS:

- **Languages:** JavaScript (ES6+), TypeScript, Python, C++, C, SQL
 - **Frontend:** React.js, React Native, Three.js, HTML5, CSS3
 - **Backend:** Node.js, Express.js, FastAPI, REST APIs
 - **Databases & Auth:** MongoDB, MySQL, JWT Authentication
 - **Real-Time & Networking:** WebSockets (Socket.io), WebRTC, Push Notifications
 - **AI/ML:** Intent Classification, Contextual Memory Systems, AI-Centered Architecture
 - **Developer Tools:** Git, GitHub, Postman, Netlify, Render, MongoDB Compass
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KEY PROJECTS:

Jarvis - Personal AI Assistant (Android and Web):

Engineered a **production-grade AI orchestrator** featuring a **custom Python intent-classifier** (built from scratch) and a MongoDB-backed contextual memory system. Integrated **JWT-secured REST APIs** and automated Android triggers to bridge the gap between web-based processing and real-time mobile execution.

Tech: React Native, React, Three.js, Node.js, Express, MongoDB, TypeScript, Python, JWT, Bcrypt

Real-Time Chat & Collaboration Platform:

Architected a high-concurrency messaging engine using **WebSockets** for bidirectional sync and **WebRTC** for peer-to-peer data streams. Developed a robust **FastAPI** backend to manage role-based access control, achieving **sub-100ms latency** for live task assignments and data synchronization.

Tech: React, TypeScript, FastAPI, MongoDB, WebSockets, WebRTC, JWT, Bcrypt

Secure Exam Conduction Platform (Deployed):

Architected a production-grade testing platform on personal infrastructure, utilized by **50+ Post-Graduate students** for official assessments. Engineered strict **anti-malpractice protocols** (Page Visibility API) with automated termination logic and operated as the **Sole Developer**, ensuring **100% uptime** during live testing.

Tech: React, Node.js, MongoDB, JWT, Python, FastAPI, Bcrypt

Jr-V1: System-Level Language Interpreter:

Developed a deterministic execution environment in **C**, implementing a full pipeline including a lexical scanner, recursive-descent parser, and runtime evaluator. Focused on **low-level memory management** and **memory-safety protocols** to ensure stable script execution and predictable runtime behavior.

Tech: C