

## 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**.

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#### 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

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##### 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

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##### 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, Python, FastAPI, MongoDB, JWT, Bcrypt

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##### 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