

# P V Jayaraman

## Software Developer | Systems & Real-Time Applications

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### PROFESSIONAL SUMMARY:

Software Developer specializing in high-concurrency systems and real-time application architecture. Proven track record of building production-grade full-stack platforms, from custom C-based language interpreters to AI-driven assistants with persistent contextual memory. Expertise in optimizing low-latency communication via WebSockets and WebRTC, and designing scalable backend services using FastAPI and Node.js.

### EDUCATION:

- **Bharath Institute of Science and Technology ( B.SC CS ) - 8.56 CGPA ( Till 2nd Semester ) ( 2024 - 2027 ) (Ongoing)**
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### TECHNICAL SKILLS:

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

### KEY PROJECTS:

#### Jarvis - Personal AI Assistant (Android and Web):

Engineered a full-stack AI orchestrator featuring a custom Python intent-classifier and a MongoDB-backed contextual memory system to maintain state across sessions. Integrated JWT-secured REST APIs and automated Android notification triggers to bridge the gap between web-based processing and mobile execution

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

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#### Real-Time Chat & Collaboration Platform:

Architected a high-concurrency messaging engine using WebSockets for bidirectional data sync and WebRTC for peer-to-peer communication. Developed a robust FastAPI backend to manage role-based access control and live task assignments, ensuring sub-100ms latency during local testing.

**Tech:** React, TypeScript, FastAPI, MongoDB, WebSockets, WebRTC

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#### LiteraSocial - Social Media & AI Chat Platform:

Designed a literature-focused social ecosystem utilizing complex MongoDB aggregation pipelines to serve personalized, weighted content feeds based on user interaction. Optimized React Native rendering cycles to handle media-heavy components and integrated an AI chatbot to facilitate real-time user engagement

**Tech:** React Native, Node.js, MongoDB, TypeScript, JWT

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#### Jr-V1 - Custom 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 custom error-handling protocols to ensure stable script execution and predictable runtime behavior.

**Tech:** C