JAYASRIRAAM S

FULL STACK DEVELOPER

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PROFESSIONAL SUMMARY

Full Stack Developer with 3+ years of experience building web applications and backend APIs using **React.js**, **TypeScript**, **Node.js**, and **Express.js**. Skilled in database design and query optimization across **PostgreSQL** and **MongoDB**, with practical experience implementing **Redis** caching, automated CI/CD pipelines, and real-time IoT telemetry systems. Built real-time IoT dashboards for 100+ devices and cut query latency by ~50%.

TECHNICAL SKILLS

Languages: TypeScript, JavaScript (ES6+), SQL, HTML5, CSS3
Frontend & Mobile: React.js, Ionic React, Capacitor, Tailwind CSS, Zustand, Three.js.
Backend & APIs: Node.js, Express.js, GraphQL Yoga (Schemas, Resolvers), RESTful APIs, OpenAI API
Databases & Caching: PostgreSQL, MongoDB, Redis (Caching & Session Stores), Firebase Realtime DB
Security & Utilities: JWT Authentication, RBAC Middleware, Winston Logging.
Real-Time & IoT: MQTT (Broker Integration), WebSocket, Telemetry Streaming, Edge Device Integration
DevOps & Tools: Docker, GitHub Actions (CI/CD), Git, Vitest, Postman, Vite, Figma, Firebase Cloud Messaging

PROFESSIONAL EXPERIENCE

SOFTWARE DEVELOPER — Dec 2024 – Present

PPV Technology Private Limited | Chennai, Tamil Nadu

- Developed and maintained production web and cross-platform mobile applications using **React.js**, **TypeScript**, **Ionic React**, and **Capacitor**, creating reusable UI components across internal business platforms.
- Implemented live IoT monitoring interfaces using **MQTT over WebSocket**, enabling status tracking and remote valve control across **100+ active edge devices** with sub-second response times.
- Integrated **Firebase Cloud Messaging** for push notifications and **Firebase Realtime Database** to synchronize device status updates across web and mobile clients.
- Configured **GitHub Actions** CI/CD workflows and multi-stage **Docker** container builds to automate linting, testing, and production deployments.

FULL STACK DEVELOPER — May 2023 – Dec 2024

Akkenam Technologies | Dindigul, Tamil Nadu

- Built backend services and APIs using **Node.js**, **Express.js**, and **GraphQL Yoga**, writing structured schemas, type resolvers, queries, and mutations.
- Optimized database performance by creating composite B-tree indexes in **PostgreSQL** and compound indexes in **MongoDB** aggregation pipelines, reducing query latency by **~50% (from ~800ms+ to <400ms)** on reporting queries.
- Implemented **Redis caching** for frequent catalog lookups and session data, reducing persistent database load during peak read traffic.
- Implemented application security using **JWT authentication**, refresh-token rotation, **RBAC** authorization middleware, and request schema validation.
- Set up centralized error-handling middleware, structured JSON logging with **Winston**, and environment secret management across staging and production.
- Developed client-facing views in **React.js** and **TypeScript** with **Zustand** for state management, converting Figma designs into responsive layouts.

PROJECTS

01 Vipani ERP — Enterprise Management Platform (Akkenam Technologies)

Node.js · Express.js · GraphQL Yoga · PostgreSQL · Redis · Vitest · OpenAI API

Customizable enterprise ERP platform supporting modular business workflows, inventory, HR, finance, and AI-driven reporting.

- Built a modular ERP backend using **GraphQL Yoga**, **Node.js**, and **Express.js**, providing unified data fetching across inventory, HR, and finance modules.
- Profiled database performance using PostgreSQL `EXPLAIN ANALYZE` and applied composite B-tree indexes, optimizing slow table scans on reporting workflows.
- Refactored Express.js middleware and GraphQL resolvers with query batching and **Redis caching**, reducing API response times by **~50% (from ~450ms+ to <225ms)** across core business modules.
- Implemented automated unit and component testing for frontend workflows using **Vitest**, ensuring UI stability and reliable state transitions across ERP modules.
- Integrated an automated **AI report generator** using the **OpenAI API** to synthesize cross-module data into business summaries and operational reports.

02 MySmartalign — Dental Aligners & Operations Platform (Akkenam Technologies)

Node.js · Express.js · GraphQL Yoga · MongoDB · PostgreSQL · Redis · React.js · Three.js · OpenAI API

Multi-tenant operations platform managing clear-aligner orders, 3D dental treatment tracking, and AI customer support workflows.

- Designed a unified **GraphQL Yoga** API gateway with structured schemas and resolvers for multi-department data fetching.
- Implemented data persistence using **PostgreSQL** for transactional orders and billing, alongside **MongoDB** for flexible patient and product catalog records.
- Integrated **Three.js** 3D canvas viewers to render real-time interactive tooth models, enabling dentists to inspect aligner staging and tooth movements.
- Integrated an **AI customer support assistant (OpenAI API)** to automate customer inquiries regarding order tracking, aligner delivery statuses, and clinic appointments.
- Applied **Redis caching** for tenant metadata and user sessions to minimize repetitive database reads.
- Developed **React.js** client views and reusable custom hooks to maintain predictable state across patient workflows.

03 Irrilot — Smart IoT Irrigation Mobile Application (PPV Technology)

Ionic React · TypeScript · Capacitor · Android & iOS · MQTT · Chart.js · Firebase FCM

Cross-platform mobile application (Android & iOS) built for remote monitoring, valve actuation, and automated irrigation schedules.

- Built the cross-platform mobile application for **Android and iOS** using **Ionic React**, **TypeScript**, and **Capacitor**, managing field master gateways, pumps, and wireless valve nodes.
- Implemented bidirectional communication via **MQTT over WebSocket**, streaming sensor telemetry and executing valve actuation commands across **100+ active field nodes**.
- Engineered automated irrigation scheduling workflows (**Programs & Groups**) with handshake acknowledgments and a 120-second watchdog timer for fail-safe field execution.
- Integrated live telemetry charts using **Chart.js** and geospatial node mapping via **Google Maps API** to monitor valve states and pressure alerts.
- Configured **Firebase Cloud Messaging (FCM)** for pump trip notifications, combined with WhatsApp OTP verification and device-binding session security.

EDUCATION

BACHELOR OF COMPUTER APPLICATION (BCA) 2020 – 2023 | CGPA: 8.0 / 10.0

G.T.N Arts College | Dindigul, Tamil Nadu

CERTIFICATIONS & TRAINING

- **React.js Development — Advanced Concepts & State Architecture** — Udemy (2023)
- **Cross-Platform Mobile Development with Ionic & Capacitor** — Udemy (2024)
- **Modern Frontend Engineering — Component Architecture & TypeScript** — Udemy (2025)