

HEMANATHAN A S

FULL STACK DEVELOPER

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PROFESSIONAL SUMMARY

- 2.4 years of experience in full-stack development, building and shipping production-grade applications end-to-end — from architecture through deployment.
- Specialized in AI-powered EdTech platforms, delivering solutions across school management, AI tutoring, and enterprise SaaS use cases.
- Proficient in the MERN stack (MongoDB, Express, React, Node.js), along with Next.js and React Native, with hands-on integration of Google Gemini and OpenAI APIs on cloud-deployed infrastructure.
- Delivered 5+ production web panels and a multilingual AI tutor for a live school platform, while engineering 15+ microservices powering real-time notifications, analytics, and scalable institution onboarding.

TECHNICAL SKILLS

Frontend	HTML5, CSS3, JavaScript (ES6+), TypeScript, React.js, Vite.js, Next.js, React Native, Tailwind CSS, Redux
Backend	Node.js, Express.js, REST API, Socket.IO, Microservices, JWT, RBAC, OAuth
Database	MongoDB, PostgreSQL, MySQL
AI Integration	OpenAI API, Google Gemini API, LangGraph
Cloud & DevOps	AWS (S3, EC2), Docker, Nginx, GitLab CI/CD
Tools	Git, GitHub, GitLab, Figma, Postman, SendGrid

PROFESSIONAL EXPERIENCE

Data Spark AI Solutions (DSAIS)

Chennai, Tamil Nadu

AI Full Stack Developer

Jan 2025 – Present · 1.8 Years

Data Spark AI Solutions builds AI-driven products for the EdTech sector, including a multi-panel school management ecosystem and an AI-powered tutoring platform.

- Built 5+ production-grade web panels and a public-facing website using React 19, Next.js, and Redux Toolkit, implementing scalable, production-level architecture.
- Developed cross-platform React Native mobile apps for schools across Student, Parent, Faculty, Admin, and Director roles with real-time notifications and AI-powered modules.
- Architected "Katrul," a multilingual AI chatbot using Google Gemini APIs and LangGraph, and built scalable Node.js/Express microservices with JWT, RBAC, and Socket.IO.
- Built real-time analytics for attendance, emotion, and classroom insights, plus an FCM-based push notification system for global and user-specific alerts.

KEY PROJECTS — SCHOOL OF SASTHRA (SOS)

SOS is a K-12 school management and virtual classroom platform used by institutions to manage students, faculty, and academic operations.

- AI-Powered Learning & Emotion Analytics:** Architected an AI-driven classroom panel with real-time facial emotion detection, AI tutoring bots (ClassroomBot, NotebookLLM), and interactive tools (EquationBalancerAI) for personalized learning.
- Real-Time Video Conferencing:** Integrated WebRTC (LiveKit) and Zoom SDK into the Virtual Classroom panel with multi-party streaming, Socket.IO messaging, and interactive virtual lab sessions.
- Multi-Tenant Portal Architecture:** Engineered 5 role-based micro-frontend portals (Admin, Director, Classroom, Student, Parent) using React 19 and Redux Toolkit, with automated multi-tenant school onboarding.
- Analytics & Assessment Engine:** Built Highcharts/React Flow analytics dashboards and a gamified STEM + Academia Test Engine with automated grading and jsPDF/pptxgenjs report export.

KEY PROJECTS — SASTHRA AI (SAI)

SAI is an AI-powered exam-preparation platform helping school and coaching-center students crack competitive exams.

- Enterprise WebRTC Migration to LiveKit with Picture-in-Picture:** Migrated the legacy Zoom SDK to a LiveKit WebRTC architecture (removing 2,400+ lines of code, fixing Vite OOM builds) and built a custom usePictureInPicture hook with Chrome Document PIP API support across 5 roles.
- Responsive Floating Overlay Portal:** Engineered a ResizeObserver-driven floating portal with dynamic sizing tiers, an audio visualizer, and keyboard shortcuts; resolved WebRTC track lifecycle bugs.
- 3D Interactive Avatars & AI Tools:** Built 3D avatar rendering using Three.js/React Three Fiber with dynamic lighting and OrbitControls, and integrated an AI Voice Bot with animated feedback.
- Learning Modules & DevOps:** Created the "LearnPractically" engine and analytics dashboards, and resolved Vite OOM build failures via Docker heap tuning and CI/CD improvements.

RVS Educational Group

Coimbatore, Tamil Nadu

Full Stack Developer Intern

Jan 2024 – Aug 2024 · 8 Months

- Built Material Management Service (MMS), a MERN stack app for inventory, approvals, and gate passes — now used across a chain of organizations with 500+ users.
- Developed Teaching Learning Evaluation (TLE) for class management, timetables, and attendance tracking, with approval-based workflows for material requests.

EDUCATION

Master of Computer Applications (MCA)

2022 – 2024

RVS College of Arts and Science, Coimbatore | CGPA: 8.5 / 10

Bachelor of Computer Applications (BCA)

2019 – 2022

RVS College of Arts and Science, Coimbatore | CGPA: 8.0 / 10