

VIGNESHINI I

Full Stack Developer

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Github

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PROFESSIONAL EXPERIENCE

FULL STACK ENGINEER | VisAI Labs | JULY 2023 – PRESENT

- Architected and engineered an **end-to-end Barcode Reader SDK** using **C++ and Node.js native addons (N-API)** integrating camera input, Scandit SDK, LED control, and real-time WebSocket triggers for automated measurement workflows.
- Developed a **cross-platform Electron desktop application** using **React, TypeScript, Redux, Express.js, and MySQL**, enabling enterprise barcode scanning and device interaction.
- Conceptualized an **event-driven workflow platform in TypeScript**, reducing custom workflow/page development time by **60%** and improving internal feature delivery speed.
- Designed and established a **remote diagnostics system** establishing persistent **WebSocket connections between edge devices and backend services** for remote configuration access, log retrieval, and debugging.
- Improved **embedded Linux networking and deployment modules** using **NetworkManager, hostapd, dnsmasq, systemd, and kernel configuration** for Raspberry Pi-based edge devices.

FULL STACK ENGINEER TRAINEE | VisAI Labs | APR 2023 - JUNE 2023

- Created **network configuration UI modules** using **React and TypeScript**, enabling device Wi-Fi and Ethernet configuration from a web interface.
- Integrated **internationalization (i18n)** using **i18next and react-i18next**, adding **Spanish language support** and establishing a scalable localization structure.
- Deployed **bulk file download functionality** for device logs and data using **Node.js backend APIs**, improving operational debugging and data access.
- Orchestrated localization strategy with **i18next and react-i18next**; expanded language support by adding **Spanish**, ensuring accurate **translation across 15+ UI components** and user experience.

TECHNICAL SKILLS

Languages: **JavaScript, TypeScript, C++, SQL, Shell**

Frontend: **React.js, Redux, React Router, Material UI (MUI), i18next, HTML5, CSS3**

Backend & Desktop: **Node.js, Express.js, Electron, REST APIs, WebSockets, Sequelize**

Databases: **MongoDB, MySQL**

DevOps & Tools: **Docker, Git, Bitbucket, npm, pnpm, Linux**

Embedded Systems: **Raspberry Pi, Systemd, NetworkManager, Debian Packaging, Kernel Configuration**

PERSONAL PROJECTS

Real-Time Collaboration Platform

- Devised a real-time task management and collaboration platform using **React, Node.js, and WebSockets**, enabling **live updates, comments, and notifications across multiple users**.
- Implemented **event-driven backend services** for efficient synchronization between clients.

OCR-Based Text Recognition System

- Built an **OCR system to extract text from images** using image processing and machine learning techniques.
- Implemented preprocessing techniques to improve text detection accuracy for scanned images.

CERTIFICATIONS

- Advanced React – Meta** (Feb 2025)
- AWS Cloud Technical Essentials – AWS** (Feb 2026)
- Computer Networks and Internet Protocols** (Apr 2022)

EDUCATION

Bachelor of Engineering – Computer Science and Engineering 2023 - CGPA: 9.0

Government College of Engineering, Tirunelveli, Tamil Nadu, India