

FREDY JOHN

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PROFESSIONAL SUMMARY

AI-focused Software Engineer specialized in bridging the gap between fine-tuned machine learning models and scalable full stack architecture. Expertise in building end-to-end intelligent systems by integrating AI/ML inference, including computer vision and NLP engines, into high-performance Vue 3, .NET, and Django/Flask environments. Proven capability in orchestrating containerized microservices (Docker/Nginx) to deliver data driven products that prioritize user experience, backend efficiency, and automated insights to solve complex business problems.

SKILLS & TECHNICAL TOOLKIT

Languages:	Python, C# (.NET), JavaScript, TypeScript, SQL, HTML, CSS.
Frontend Frameworks:	Vue 3 (Vite, Pinia), React, GSAP, Three.js, Vuetify, Ant Design, Bootstrap, Tailwind CSS.
Backend & Architecture:	.NET Core, Django, Flask, REST APIs, Microservices, Node.js.
AI/ML Stack:	PyTorch, TensorFlow, Keras, Transformers, Pandas, NumPy, Scikit-learn, Matplotlib, Librosa (Audio), ONNX Runtime.
DevOps & Infrastructure:	Docker & Compose, Nginx, CI/CD Pipelines, GitHub Actions, Linux Server Admin.
Database & Storage:	PostgreSQL, MySQL, Redis, SQLAlchemy, Entity Framework Core.
Tools & CMS:	WordPress, Postman, Git/GitHub, PyCharm, PythonAnywhere, VS Code.

PROFESSIONAL EXPERIENCE

Web Developer / Systems Architect | Dream House Real Estate, Toronto

Jan 2025 - Present

- End-to-End Automation Pipeline:** Engineered a multi-format document extraction system processing structured (Word, Excel, price lists, tables) property files using Tesseract, PaddleOCR, and the Donut transformer model to extract and structure data for internal systems.
- CRM & Email Orchestration:** Engineered automated email workflows using Python (smtplib/MIME) with event-driven triggers based on CRM pipeline states, alongside bulk data ingestion scripts that synchronized 500+ records from Excel into the CRM database eliminating manual entry bottlenecks entirely.
- Internal UI/UX Design:** Designed and developed custom high-fidelity user interfaces and HUDs for the internal CRM, prioritizing intuitive navigation and efficient data management for administrative teams.
- Full-Stack Platform Development:** Built and deployed responsive analytics dashboards and employee management interfaces using Vue 3 and React frontend, powered by custom-built Flask REST APIs.
- Multimodal Vision Integration:** Built a full-stack Flask application leveraging Meta LLaMA 4 Scout (Llama Scout) for intelligent extraction from real estate price lists and floor plans processing both DOCX and PDF inputs via a 4-step pipeline (OCR → AI extraction → floor plan merging → Pydantic validation), returning structured property inventory data with per-field AI confidence scoring.

Software Engineer | Assyst International Pvt. Ltd., India

Oct 2023 - Mar 2024

- Enterprise Module Engineering:** Designed and implemented a comprehensive recruitment engine within the company's enterprise ERP ecosystem, utilizing a modern .NET Core and Vue.js architecture.
- Scalable UI/UX Scaffolding:** Developed high fidelity user interfaces using Vue.js and specialized libraries (Vuetify / Ant Design), prioritizing Rapid Application Development (RAD) and material design principles.
- Security & Access Control:** Engineered a robust Role Based Access Control (RBAC) framework and security middleware to protect sensitive candidate data and streamline administrative permissions.
- Data Persistence & Modeling:** Architected highly optimized MySQL schemas and managed complex data persistence using Entity Framework ORM to support a corporate hiring lifecycle.
- Collaborative R&D:** Contributed to internal Research & Development projects, collaborating with cross functional teams to identify and prototype innovative software solutions.

Junior Python Developer | Inmakes Infotech, India

July 2023 - Oct 2023

- E-Commerce System Architecture:** Engineered a full featured e-commerce platform using Django and PostgreSQL, implementing complex relational logic for user authentication, persistent shopping carts, and product inventory management.
- Production Deployment:** Managed the end-to-end deployment of web applications on PythonAnywhere, configuring WSGI servers and static file handling for live environments.
- API Foundation:** Developed and tested RESTful API endpoints using Flask and Django Rest Framework, establishing the communication layer for cross service data exchange.
- Data Transformation:** Utilized Pandas and NumPy to perform advanced data cleaning and transformation tasks, establishing a foundation for data-driven backend logic.

PERSONAL PROJECTS & AI RESEARCH

Flagship Core: THE DEV FREDY PLATFORM (Full-Stack AI Ecosystem)

- Architectural Orchestration:** Engineered a production grade 10 container Docker environment on a Cloud VPS, utilizing Nginx as a centralized reverse proxy to securely route traffic between disparate AI engines (Django, Flask, .NET).
- High-Fidelity Interface:** Developed an immersive, "Cyber-HUD" dashboard using Vue 3 (Composition API) and GSAP for performance-optimized animations; utilized Pinia for cross node AI state management.
- Proprietary Engagement Telemetry:** Architected an internal tracking pipeline to monitor user interactions and clickstream data. Developed a custom Django to Vue signal that utilizes window.history scrubbing to silently remove tracking parameters from the URL bar for a seamless user experience.
- Real-Time Admin Oversight:** Integrated Server-Sent Events (SSE) to stream live engagement metrics and hardware "Pulse" data directly to a secure, admin only dashboard for real time infrastructure monitoring.

Forensic Text Analyzer (AI-Scan Node)

- Pattern-Based Detection:** Built a classification engine using PyTorch and HuggingFace Transformers to identify linguistic traits and "predictable rhythm" unique to AI generated writing.
- Scalable Pipeline:** Engineered a robust document-parsing engine (pdfplumber, docx2txt) to enable high volume batch analysis and automated report generation via fpdf2.

Experimental Medical Intelligence (MedBot Node)

- Medical Inference & Confidence Gating:** Fine tuned a custom BART (Bidirectional and Auto-Regressive Transformers) model on specialized medical datasets, engineering a real time probability analysis system that automatically blocks low confidence responses to enforce strict clinical knowledge bounds.
- Intent Filtering:** Built a robust linguistic guardrail system to focus the model strictly on wellness topics, supported by high priority emergency triggers for sensitive medical incidents.

High Accuracy Botanical Pathology Node (Plant Doc Node)

- Computer Vision Engine:** Developed a convolutional neural network (CNN) using TensorFlow and Keras, optimized for pixel level recognition of 30+ botanical diseases.
- Automated Mitigation:** Synchronized identification results with external knowledge bases (Wikipedia API) to provide users with immediate, data backed treatment protocols.

EDUCATION

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| • Artificial Intelligence & Machine Learning (Postgraduate Specialization) | Lambton College, Toronto 2024 - 2026 |
| • Bachelor of Computer Application (BCA) | University of Calicut, India 2020 - 2023 |

CERTIFICATIONS

- Advanced Image Processing & Machine Learning - STED Council, India
- Professional Python Programming Certificate - STED Council, India
- Skill Enrichment Programme (STED Council) - India