

Immanuel Monroe

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Experience

Software Engineer, Resilient Coders – Philadelphia, PA

Jan 2025 – Present

- Built and deployed multiple deep learning models using PyTorch and fast.ai, including an image classification model with Gradio/HuggingFace web integration, improving model accessibility for non-technical users.
- Developed an AI-powered learning platform with Next.js 14, TypeScript, Tailwind, and Supabase, featuring flashcards, analytics dashboards, group study, and adaptive AI tutors.
- Engineered multi-provider AI integration system (Gemini, OpenAI, Anthropic, HuggingFace, Ollama) with intelligent fallback to optimize performance and reduce token costs by 90%.
- Automated repetitive workflows with Python-based CLI tools for text and data analysis, cutting manual processing time and ensuring reproducibility.

Software Engineer, Manna Inc. – Philadelphia, PA

Jan 2023 – Jan 2025

- Automated e-commerce and banking data aggregation by engineering backend services with Node.js/Express, PostgreSQL, and Google Cloud Functions, integrating Shopify APIs and secure secrets to boost workflow efficiency and data reliability.
- Resolved a nil pointer dereference in a GraphQL resolver by adding session null checks, preventing crashes for unauthenticated requests and improving API reliability.
- Improved app performance and state management by building a custom React hook for API fetching and error handling, and adding a data filter to remove duplicate responses, cutting load times from 5s to 2s and boosting data integrity.
- Enhanced development efficiency and data reliability by building full CRUD operations with a Spring Boot REST API and PostgreSQL, connected to a Next.js frontend and containerized with Docker for consistent local environments.

Software Support Engineer, InformData – Remote

Feb 2024 – July 2024

- Reduced team ticket closeout time by troubleshooting an error in the system that impacted daily error queue report delivery, leveraging DataDog and AWS (S3) for log analysis and client API payload verification.
- Resolved a ticket credit allocation error by optimizing complex SQL queries and implementing data integrity checks, restoring accurate vendor metrics crucial for fair performance reviews and preserving strong vendor relations.
- Increased system uptime by resolving recurring page crashes with data validation scripts to address relational database null values on user records reported by external vendors.

Skills

Language: Python, JavaScript/TypeScript, SQL, Java, HTML, CSS

Database: PostgreSQL, Microsoft SQL Server, MongoDB, Firebase, SQLite

Frameworks/Libraries: PyTorch, fast.ai, React, Next.js, TypeScript, Node.js, Express.js, EJS, Spring Boot, Tailwind, Bootstrap

Tools/Platforms: Git, Docker, GCP, AWS, Linux, CI/CD, Jira, Postman, DataDog, Jest, Playwright, unittest

Projects

Eremos – AI-Powered Mental Health Journal

github.com/immonroe/eremos

- Integrated Gemini AI API to generate personalized mental health reflections from user entries
- Developed a responsive analytics dashboard using Chart.js for data visualization, transforming raw journaling data into visual streaks, trends, and usage patterns, increasing user engagement and retention.
- Streamlined MongoDB queries and partial components to reduce memory use and speed up page loads.

SafeRoute – Community Safety Map

safe-route-6iqv.onrender.com

- Engineered a full-stack interactive map with Leaflet.js, Node.js/Express.js, and MongoDB, enabling real-time reporting
- Implemented secure user authentication and session management using Passport.js/bcrypt, ensuring safe, reliable access.
- Integrated Node-Geocoder, Cloudinary, and Multer for geocoding, secure image uploads, and accurate map plotting.
- Designed and implemented auxiliary Mongoose schemas to structure backend data, improving maintainability and supporting scalable application features.

Education

University of Valley Forge – Bachelor's of Science, Social Work

Apr 2018