

RICK (MINGYU) LIU

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Professional Experience

AI Engineer, Software Developer

Sept 2024 – Dec 2024

Inspur Group Co., Ltd.

China

- Collaborated on the development of a **multi-agent platform** designed to support advanced **Agentic Workflows**.
- Developed a **document conversion pipeline** utilizing **Optical Character Recognition (OCR)** to extract **text, images, and tables** from diverse formats (e.g. PPTX, DOCX, PDF, etc.) and converting them into **Markdown**.
- Optimized **input segmentation and retrieval** within the **RAG pipeline**, improving system **accuracy**, reducing error rates by **50%**, and enhancing overall **user satisfaction**.
- Built a **FastAPI service** to generate **custom Word documents** using plain text or templates with placeholder replacement, integrating **MinIO** for efficient storage and retrieval workflows.

Technical Skills

Programming Languages: Python, JavaScript, TypeScript, C#, C++, C, SQL, Bash, R, HTML, CSS, SCSS

Libraries/Framework: Numpy, Pandas, Matplotlib, PyTorch, BeautifulSoup, Django, Flask, FastAPI, React, Next.js, Node.js, Express.js, TailwindCSS, Prisma, Jasmine, MongoDB, Neon, Redux, Docker

Dev Tools: Visual Studio Code, Jupyter Notebook, PyCharm, Linux, Xcode, Unity, Git, GitHub Actions

Projects – Additional Details Available on Personal Website

Moros - 2D Story Driven Puzzle Adventure Game

[details](#)

- Developed a game in a team of 8 (4 programmers) using **Unity** within **one month** for the **GitHub & itch.io** Game Jam, ranking **#246** out of **5,000+** participants.
- Collaborated in **weekly team meetings** to design the theme and style for **Moros**, a **single-player 2D story-driven puzzle adventure**, while tracking **progress** and refining **mechanics**.
- Managed **input systems** (player movement, interactions, special abilities), ensuring **responsive gameplay** and integration with **puzzle elements**.
- Developed **dialogue systems** and **implemented player abilities** like hiding during boss fights, adding **strategic layers** to gameplay.

AI-Powered Financial Forecasting and Visualization Dashboard - Full Stack

[source code](#)

- Created **responsive** visualizations with **MUI**, **Recharts**, and **React**, showcasing interactive charts and tables for key financial metrics.
- Built and maintained a **backend** server with **Node.js** and **Express.js**, efficiently handling **API** requests with a **TypeScript**-based, scalable architecture.
- Handled over **4,000 data** entries using **Mongoose** and deployed the application with **Vercel**, **Docker**, and **Fly.io**.
- Implemented a **linear regression model** using **regression.js** to forecast annual revenue based on historical data.

AI-Powered Auto-Updating Blog - Full Stack

[source code](#)

- Developed using **Next.js** for **full-stack** capabilities, with **TypeScript** ensuring type safety and maintainable code.
- Integrated **OpenAI APIs** for AI-driven content generation and updates, enabling users to edit articles with **AI assistance** seamlessly.
- Implemented **Prisma** and **Neon** for a robust, scalable database solution supporting efficient data management.
- Styled the platform with **TailwindCSS** for a **modern, responsive UI** as well as an intuitive user experience and deployed on **Vercel**.

SaaS Application Template - Full Stack

[source code](#)

- The SaaS template application is developed using **Django** for the backend, **TailwindCSS** for the frontend, **Neon** for database management, and deployed on **Railway**.
- Payment integration is facilitated by the **Stripe API**, supporting both one-time and subscription payments.
- **Docker** is used for containerization, with **GitHub Action Workflows** automating the CI/CD pipeline for testing and deployment.
- The application structure includes **checkouts**, **subscriptions**, **dashboard**, **customers**, **profiles**, and a **landing page** for comprehensive service management.

Education

University of Waterloo

Waterloo, Ontario, Canada

Bachelor of Computational Mathematics, Combinatorics and Optimization, Minor in Computing

2023-2028