Isaac Tay

AI Software Engineer from Singapore, with a strong interest in building Software/AI & Machine Learning models for public good.

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github.com/izack8
izack.dev (click me to learn more!)

EXPERIENCE

Synechron, Singapore — AI Software Engineer

Sep 2024 - Present

- Developed an ML pipeline using Azure AI Services to automate key information extraction from invoices, reducing processing time and enabling faster uploads for mandatory audits.
- Designed and developed a Chatbot powered by Retrieval-Augmented Generation (RAG), to query company knowledge base, replying users with relevant information.
- Led the design and development of a dashboard software for the HR department, tracking Singapore's business unit's headcount compliance.
- Designed and implemented several GitLab CI/CD pipelines to automate build/test/deployment, for the developed applications.
- Designed and containerised applications using Docker/Podman, deployed on AWS EC2, including a MySQL server with persistent volume.
- Completed company-sponsored training in Java (J2EE) and Cloud technologies, enhancing technical expertise.
- Organized and coordinated corporate events for 30+ employees, demonstrating leadership and project management skills.
- Led onboarding sessions for new hires, teaching them Git version control, Docker/containerized environments, and client–server fundamentals to accelerate team productivity.

Groundup.AI, Singapore — Data Science Intern

Jan 2024 - Jul 2024

- Led the development, validation, and deployment of predictive maintenance Machine Learning models using audio files as training data.
- Managed the deployment of edge-computing devices (Google's Coral Board) and AI models for real-time analytics in client environments.
- Generated and presented comprehensive reports to stakeholders, showcasing the integration of AI with IoT/edge-computing devices to enhance client confidence and project outcomes.

Hummingbird Bioscience, Singapore — AI Engineer/Web-Dev Intern

Sep 2023 - Dec 2023

- Fine-tuned, tested, and evaluated various Large Language Models, benchmarking their performance against GPT-3.5 and GPT-4, to determine the best model for the summarising of academic papers on cancer research.
- Used Streamlit framework to develop a Chatbot UI, backed by OpenAI's LLM.
- Maintained and enhanced an internal Chatbot that retrieves and summarizes academic papers daily, redesigning the UI to better align with research scientists' reading workflows.

Bosch GmbH, Singapore — Data Science Intern

Jun 2022 - Jun 2023

- Collaborated with a research scientist in the development of a smart and sustainable HVAC system, by translating academic research into practical code implementations.
- Conducted comprehensive literature reviews on anomaly detection and predictive maintenance in HVAC systems.
- Built an end-to-end forecasting system by designing a Python ETL pipeline and developing time series models for accurate anomaly detection in HVAC systems.
- Developed and deployed PowerBI dashboards with intuitive visualizations to help users identify anomalies at a glance, backed by the time series model.

SKILLS

Programming Languages
Python, Java, Swift, JavaScript, SQL, CLI, HTML, CSS

Libraries & Frameworks
torch/tensorflow, pandas, LangChain, VectorDB, Streamlit, FastAPI, Springboot, ReactJS, Tailwind CSS

Tools & Platforms
Git, Docker/Podman, Azure Cloud, Vercel, Railway

Certifications
Azure AI Engineer Associate, Azure AI Fundamentals, Azure Fundamentals

PROJECTS

Codebot
NTU's capstone project: to study the performance of LLMs between using RAG and fine-tuning. (TL;DR: RAG performs better (for most contexts))

Portfolio Website (izack.dev)
A personal website developed by me, to showcase my projects, software engineering skills, and experiences, deployed on Vercel

Backend Service for izack.dev
An extension service from my personal website, handling authentication, and CRUD operations, deployed on Railway

EDUCATION

Nanyang Technological University (NTU)
Aug 2020 - Aug 2024

Bachelor's in Electrical and Electronics Engineering w/ a specialisation in AI