

LIM ZHENG XUAN

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WORK EXPERIENCE

ST Engineering | Deepbrain

Nov 2024 - Present

AI/ML Engineer

- Spearheaded development of a Full-Stack web application with Automatic Speech Recognition (ASR) capabilities for a hotline service, enhancing the workflow of around 40 users
- Deployed the solution on-premise at a production level, ensuring reliability and code security via VAPT
- Developed a Natural Language Understanding (NLU) engine to accurately extract key information for automated form filling
- Collaborated across cross-functional teams to gather requirements and deliver solution that meets stakeholders standards and satisfaction

AI Singapore

Jan 2024 – Oct 2024

AI Apprentice (AIAP Batch #15)

- Formulated and developed data cleaning and feature engineering pipelines using Kedro to automate data preprocessing for downstream tasks, increasing data ingestion efficiency
- Developed an LLM-based solution for English grammar correction and multi-class error classification, consisting of 60 distinct error types
- Employed various Prompt Engineering techniques (e.g., Few Shot, Chain of Thought) using LangChain to steer LLMs towards generating desired outputs, improving error classification performance by 46%
- Implemented RAG architecture using Milvus vector database to integrate document retrieval methods, further increasing solution performance by 20%
- Achieved an additional 8% improvement in performance through fine tuning of LLMs using OpenAI SDK and hyperparameter tuning
- Mentored a group of 6 newer apprentices on machine learning concepts and good software practices to accelerate their learning experience in the programme

National University Health System (NUHS)

May 2022 – Jul 2022

AI & Data Science Intern

- Built a RESTAPI service from scratch to carry out ETL processes using an enterprise-level data integration software to support a chatbot application
- Performed deployment of the RESTAPI service through Docker and Kubernetes in the test environment
- Collaborated in a team of 6 members following the Agile SCRUM framework to develop the chatbot application according to Sprint objectives

EDUCATION

National University of Singapore (NUS)

- Bachelor of Engineering with Honours (Distinction)
- Minor in Computer Science

PROJECTS

Fake Face Detection

- Achieved 60% test accuracy on fake face detection task by leveraging a pretrained InceptionResnet model with custom classifier head built using PyTorch
- Hosted the AI engine using a Python Flask application to facilitate efficient inferencing
- Implemented Explainability AI techniques (GradCAM) to improve model transparency and interpretability, enabling users to better understand AI predicted outputs

Mahjong Tile Detection

- Performed image augmentation on an image dataset using OpenCV to expand dataset by 10 times
- Trained a YOLOv7 model to accurately detect and classify 3 types of Mahjong tiles on images, videos and in real-time using webcam

SKILLS

Python | SQL | Java | Numpy | Pandas | Scikit-Learn | Matplotlib | TensorFlow | PyTorch | HuggingFace | Git | Docker | Kubernetes | Kedro | MLOps | Agile