

Lee Yen Foong Ernest

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EDUCATION

Nanyang Technological University Bachelor of Computing (Hons) in Computer Science

Aug 2021 – May 2025

- Honours (2nd Upper) GPA: 4.21/5.0
- DSTA BrainHack 2024 CodeEXP Hackathon MVP 1st Runner-up
- NTU Product Management Experience Internal Product Challenge 2nd Runner-up
- Dell InnovateFest 2024 NTU Top 3 Finalist
- HTX HacX 2024 Semi Finalist

INTERNSHIP EXPERIENCE

WS Audiology, Singapore

Aug 2024 – Dec 2024

Software Developer Intern

- Developed a Servicebot Microservice using Python FastAPI, assisting 50+ Hearing-Aid customers monthly with queries.
- Built a Langchain pipeline leveraging AzureOpenAI and integrated an answer repository in Azure Cosmos DB for Retrieval Augmented Generation, utilizing AI Search to optimise accuracy.
- Deployed application on Azure App Services, reducing ServiceBot response time, boosting customer satisfaction by 30%.

Novo AI, Singapore

Jun 2024 – Aug 2024

Full Stack Engineer Intern

- Developed a Full Stack web application, using NextJS, leveraging on Large Language Models (LLMs) capabilities to perform comprehensive online research, providing users with high-quality, accurate information.
- Enhancing the quality of query answers by integrating external data sources.
- Automated customer monitoring using Vercel's Cron Job, executing updates every 24 hours for 100+ selected customers.

Agency for Science, Technology and Research (A*STAR), Singapore

Jul 2023 – Dec 2023

Machine Learning Engineer Intern

- Utilised pretrained human emotion prediction model with transfer learning to predict student's engagement rate in an online classroom environment, pioneered the first machine learning model to predict student's engagement.
- Achieved 73.4% accuracy in 4-class emotion classification, exceeding the State-of-the-Art by 5% (benchmark accuracy: 68.3%) and achieving 95.1% accuracy with anomaly detection.
- Performed intensive research on the State-of-the-Art machine learning models available in the market, understanding the concepts used and rationale behind certain methods.

Continental AG

Apr 2022 – Jul 2022

Software Engineer Intern

- Designed and implemented automation software tools, reducing manual tasks by ~60% and improving team efficiency by an estimated 10 hours per week.
- Developed a strong understanding of Agile Scrum methodology and effectively used Jira for daily work progress tracking.
- Experienced the Software Development Lifecycle stages when creating software for customers, enhancing my software development knowledge.

PROJECTS

Small Data, Big Impact

- Engineered a VAE-based text augmentation pipeline to expand small sentiment datasets, addressing data scarcity in NLP tasks.
- Conducted comparative experiments with BERT, GPT-2, and LSTM classifiers, validating that VAE-augmented training boosted test F1-scores by up to 20%.

TrainTogether

- Managed a team of 5 developers to deliver a full-stack web application that allows users to manage and plan their exercise activities, find the nearest exercise and food facility, using React, Express.js and Firebase.
- Documented the backend API specifications using Swagger to provide clear and comprehensive documentation for developers, facilitating easy integration and future development efforts

PantryPal

- Developed a mobile application using React Native that allows users to track their food and expiry dates by recording a video of the food and processing using Video LLaVa
- Implemented RAG solutions to fetch recipes from online sources, integrating with LLM to suggest food recipe options, preventing LLM hallucinations

TalkGPT

- Developed a chatbot web application using ReactJs with Typescript, integrating LLM model: OpenAI gpt-3.5 to a chatbot which can answer questions.
- Utilised Retrieval Augmented Generation with Web Search together with LangChain to enhance the quality of responses which requires domain-specific knowledge.
- Enhanced user accessibility by incorporating text-to-speech functionality.

CO-CURRICULAR ACTIVITIES and CLUBS

NTU School of Computer Science and Engineering Club – IT Sub-Committee

Aug 2024 – Present

- Built a PYPHub for NTU Computer Science students to discuss Past-Year-Papers related questions.

NTU School of Computer Science and Engineering Club – Sports Sub-Committee

Aug 2022 – May 2023

- Hosted Inter-School Games 2023

NTU Hall 6

- Captain of Chinese Chess Club AY24-25
- Represented Hall 6 in Inter Hall Games (IHG) 2022 and attained first place.

SKILLS

Languages: Python, JavaScript/TypeScript, C/C++, Java, SQL

Frontend: HTML/CSS, React, Tailwind CSS, ShadCN, Material UI

Backend: Node.js, Express.js, Django, Flask, FastAPI, Jest

Databases: MongoDB, Supabase, PostgreSQL, Redis, Microsoft SQL Server

Cloud: Microsoft Azure