Nguyen Minh Trung Hieu - Software Engineer

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SUMMARY

I'm a university undergraduate studying IT, my specialty is Software Engineering. I have 2 years experience in building web applications from Front-end to Back-end. I have experimented with many web frameworks such as NodeJS, Java Spring and React. I also enjoy learning about algorithms as it helps improve my problem solving skills.

Currently, I'm spending time learning about Large Language Models and how they can be applied to web applications to increase user experience, as well as data processing. My goal is to become a well rounded engineer who is capable of creating simple and easy-to-use softwares and large systems.

TECHNICAL SKILLS

Programming languages: Python, JavaScript & TypeScript and Java.

Frameworks/ Flatforms:

1. Langchain, Pandas, Sklearn.
2. Spring framework, Servlet, Java Core
3. NodeJS, ReactJS, Typescript, Vite
4. Web API, ORM, MVC

Database Management System: MySQL, MS SQL, Firebase Firestore

Foreign Language: IELTS 7.5

Others:

1. Good understanding of OOP methodologies, SOLID principles, softwares development activities and some popular design patterns.
2. Have a basic understanding of the Linux Operating System and experience in writing bash scripts.
3. Using Docker containers to develop applications, and setting up a simple Docker network for web development.

PROFESSIONAL EXPERIENCE

NLP Lab - Data Collector/ Preparer 8/2023 - Now

Project: A chat bot system that can answer all types of admission questions (5 team members all working on training model and data collecting, 2 tech leads).

Description: A chatbot that is capable of answering all types of admission questions in Vietnamese and English with up-to-date information. The system is backed up with a retrieval system to improve on-date questions.

Technologies:

- T5 for LLM
- Scrapy, Beautiful Soup for data collecting
- Third party LLM, LangChain for QA generation
- ElasticSearch for building a retrieval system

Responsibilities:

- Collecting public data about admission information from education websites in 2 weeks. To overcome the time due , I have learned how to code a multithreading program that can process many pages for a given time. The total data collected was about 2000 rows of admission information.
- Generating QA data from wiki pages in 4 weeks using LLM. The major problem we were facing at that time is how to make sure the Answers are correct. I have come up with a way of using a given paragraph to generate list of questions and then the answers. The final results were good, my team were able to generate more 10.000 QAs.
- Research on building a retrieval system. I was given a task to prepare an ElasticSearch instance for the retrieval system. Currently, I am learning about sentence embedding models to turn sentences into vectors.

WeCycler - Back-end Engineer 7/2023 - Now

Project: A chat bot system that can help categorize users' trash, wastes (1 front-end, 1 back-end and 1 business consultant).

Description: A web application built using Streamlit with core functionalities developed by utilizing a Large Language Model with LangChain. This application can ask users questions about their waste and find the good match to who needs it.

Technologies:

- Streamlit for web development
- Langchain and AI21's Jurassic 2 model for core functionalities development
- Redis for vector database
- Langsmith for prompt engineering and LLM monitoring

Responsibilities:

- Developing core functionalities for the project. I was tasked to develop the "asking user" and "matching products" functionalities. Since OpenAI is restricted in VN, me and my friend had to find another option. Also writing test cases for those functionalities can be challenged as well. In the end, the project is working fine with electronics, recycling wastes use cases.
- Discussing and designing the architecture for the project. At the time, I applied modular architecture with the main module contains the running procedures for the main functionalities. Therefore, the development process is more smooth.

Java final project – Back-end Engineer 10/2021 - 12/2021

Project: A web application based on Gmail's functionalities (1 front-end, 2 back-end).

Description: A web application that lets users chat like sending emails. The project was given by my lecturer for the final of Java Technology course.

Technologies:

- Spring framework for back-end development
- MySQL for database
- HTML, CSS and vanilla Javascript for front-end development

Technologies:

- I was tasked with designing the architecture, specifically the data modeling and the functionalities. To express the idea to my team, I drew a sequence diagram of the functionalities and a class diagram for the data modeling.

- Developing the functionalities with Spring framework. All the basic functionalities were coded in Java Spring and tested using JUnit Test. Although, we did not clone all Gmail's functionalities, but our project was hosted and got a grade 9.

EDUCATION

TÔN ĐỨC THẮNG UNIVERSITY (Viet Nam) 8/2020 - now

- Studying Software Engineering
- Current Grade: Good - GPA 8.3

PASTIMES AND ACTIVITIES

- I am keen on reading books, Medium, Baeldung's blogs. My favorite books are Head First Java, Clean Code, Secrets of JS Ninja, and The manga guide to databases.
- I am also enjoying solving coding problems on Hackerrank.