Nguyen Huu An

Find a solution better than just code

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Education

Bachelor — **2020 - now**
Ton Duc Thang University - GPA: 8.8/10

Master (4+1 Program) — **2023 - now**
Ton Duc Thang University

Technical Skill

Programing languages	*Python, Java*
Framework	*Keras - Tensorflow, FastAPI*
Others	*Github*

Projects

1. **Cryptanalysis - Monoalphabetic** - Roles: *Developer*

   Technology: Python
   Algorithm: Genetic Algorithm, Hill climbing, ...
   Github Repository: *Mono-alphabeic and cryptanalysis*
   Description: This project was a part of my university's Probability and Statistical course. It required me to research the Monoalphabetic technique for encoding text and the Frequency Analysis technique for decoding cipher text. I implemented these techniques using Python. In the beginning, I read various research papers and learned about the **Hill Climbing Algorithm**, which helped solve the problem. I also used frequency analysis to decode the cipher by searching for the correct key and evaluating it using **n-grams (bi-grams)**. However, I noticed that my algorithm decoded short paragraphs quickly but had difficulty with longer ones, taking more than 13 minutes for a 5000-word paragraph. After completing the assignment, I continued my research and discovered that the **Genetic Algorithm (GA)** would be more effective than the previous algorithm. I kept the same evaluation method and integrated the GA, resulting in significant improvements. With the GA, I could decode lengthy paragraphs in less than 5 minutes, achieving better outcomes.

2. **Kaggle competition: Google Brain - Ventilator Pressure Prediction** - Roles: *Developer*

   Technology: Python, Tensorflow 2.0
   Algorithm: Neural network - LSTM
   Kaggle Notebook: *Final project*
   Description: This project serves as my final assignment for the Artificial Intelligence course. It required my team to participate in the Kaggle competition titled "Google Brain - Ventilator Pressure Prediction." The objective of this competition was to predict ventilator pressure based on given input data. To tackle this problem, I employed a Neural Network - specifically a bi-LSTM Network, as I recognized it as a time series

problem. Initially, I faced challenges in preprocessing the data for this particular problem. However, through discussions and research, I discovered several methods to address this issue. These methods included shifting the data and incorporating additional features. After training the model for over three hours on the Kaggle kernel, I submitted my results and achieved an impressive score of 0.1873.

3. **Android Application - Supermarket** - Roles: *Back-end Developer*

   Technology: Python, FastAPI, MongoDB, Java
   Kaggle Notebook: *Mobile application development final project*
   Description: This project is the final project of the Mobile Application Development course. Our team came up with an idea to develop an online supermarket application. We divided ourselves into two roles: front-end developer and back-end developer. I took on the responsibility of building the backend using Python, FastAPI, and MongoDB to create a RESTful API for the application. My task was to write the necessary logic that allows the application to interact with the database through the API. To transform the application into a fully functional product, I decided to deploy it on the Fly.io platform and provide an API endpoint for my teammates. Additionally, I occasionally assisted my teammates by coding certain features of the application.

Language

English B1

Certificates

1. Coursera - Introduction to Artificial Intelligence (AI)
2. Python (Basic) - Hacker rank
3. Agile Scrum

Extracurricular activities

2020-2021	Collaborator of ICON Academic Club
2021-2023	Head of ICON Academic Club

Awards & Achievements

2020-2021:

1. Member with active contribution to ICON Academic Club in the school year 2020 - 2021
2. The Board of Directors successfully completed the tasks of ICON Academic Club, Faculty of Information Technology, Semester 2 of the academic year 2020-2021

2021-2023:

1. Member with active contribution to ICON Academic Club in the school year 2020 - 2021
2. The Board of Directors successfully completed the tasks of ICON Academic Club, Faculty of Information Technology, Semester ***1 & 2*** of the academic year 2021-2022, 2022-2023
3. Students who have made great contributions to the Faculty of Information Technology development are evaluated for successfully completing the tasks of the ***1st, 2nd*** semester of the academic year 2021 - 2022