Dang Trung Hieu

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EDUCATION

Nanyang Technological University — Singapore
Bachelor of Environmental Engineering — *Aug 2021 – May 2025*

EXPERIENCE

Singapore–MIT Alliance for Research and Technology — Singapore
Machine Learning Engineer — *Apr 2024 – Aug 2024*
- Developed a GAN model with a maximum downscaling factor of 64
- Downscaling is a technique to convert images to higher resolution (e.g., converting temperature data from a map of 1x1 km grids to 200x200 m grids, which corresponds to a factor of 5)
- Attained a mean absolute error (MAE) of 0.45°C, overachieving the target of 2°C MAE

Data Analyst — *Jan 2024 - Apr 2024*
- Conducted large, multi-table data preprocessing, statistical analysis, and data visualization
- Published paper in Urban Climate Journal: Impact of rainfall on air temperature, humidity and thermal comfort in tropical urban parks

Google Summer of Code 2023: http4s Ember WebSocket Client — Remote, Scala Center
Student Developer — *May 2023 – Aug 2023*
- Developed a full implementation of a WSClient for http4s Ember—one of the most popular Scala web frameworks
- Presented the project at the Northeast Scala Symposium

PROJECTS

NTU MLDA Club Project: Automated Grading System — *Sep 2024 - Present*
LLM Team Lead
- Utilize VLMs and LLMs to grade students' exams based on a given grading criteria

FYP: Applied ML in Membrane Fouling — *Aug 2024 - Present*
Lead Author
- Predict flow rate through membrane over time
- Collaborate with NTU Asst. Professor and MIT PhD Graduate

Personal Portfolio — *Oct 2024 - Present*
Personal Website
- Built with Front-end React Application

Personal Blog: Analyzing my Spotify Data — *Oct 2024*
- Conducted data preprocessing on 6 years' worth of my personal Spotify data
- Created 10 visualizations with Plotly Javascript

Visualizing IMDB Series Ratings over time
imdb-tableau — *Jul 2024*
- Conducted Multi-table Data Preprocessing with Pandas, with largest dataset containing 11 million rows
- Performed Data Modelling to relate data tables and built a Tableau Visualization Dashboard

imdb-react-graphql — *2022 - 2023*
- A full-end web application built with PostgresQL, Flask, and ReactJS
- Contributed to the GraphQL backend built with Flask and the PostgresQL database
- Developed the Frontend Application with React and Highcharts

Open-source Contribution for bank.green — *2023*
Volunteer Developer
- Contributed bug fixes and improvements for the bank.green website

Analysis of U.S. COVID-19 Mortality — *2022*
Team Lead
- Conducted exploratory data analysis and visualization of COVID-19 related deaths
- Built ML models to predict the number of ICU beds and ventilators needed 1 day in advance

Skills

Languages: Python, SQL (Postgres), JavaScript, HTML, Scala, Haskell
Frameworks: React, Node.js, Flask, FastAPI
Tools: Tableau, PowerBI, Git, Bash, Linux
Soft skills: Time Management, Communication, Adaptability, Leadership, Technical Writing, Presentation