

# Dang Trung Hieu

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## EDUCATION

### Nanyang Technological University

Singapore

*Bachelor of Environmental Engineering (Current GPA: 3.75/5)*

*Aug 2021 – May 2025*

- MH2814 Probability and Statistics: A+
- MH1812 Discrete Mathematics: A

#### *Certificates*

- Microsoft Power BI Data Analyst
- Google Advanced Data Analytics Professional Certificate
- Google Data Analytics Professional Certificate

## 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 OCRs and CV models to detect text work, equations, and graphs from exam submissions
- 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*

- Develop ML and DL models to predict flow rate through membrane over time
- Lead author, 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**

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**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