

# Dang Trung Hieu

MOE Tuition Grant Holder

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## EDUCATION

### Nanyang Technological University

Bachelor's Degree – Environmental Engineering – Honours Merit

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

Singapore

Aug 2021 – May 2025

### Certificates

- MIT IDSS Data Science & Machine Learning Course
- Microsoft Power BI Data Analyst Specialization
- Google Advanced Data Analytics Professional Certificate

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## SKILLS

- **Programming Languages:** Python, R, SQL, Scala, TypeScript, JavaScript, HTML, Haskell
- **Frameworks:** Seaborn, Plotly, Pandas, PyTorch, Tensorflow, FastAPI, Next.js, Node.js, React.js, Spark, Hadoop
- **Tools:** Google Sheets, Power BI, Tableau, Microsoft Excel, Microsoft PowerPoint, Git, Bash

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## EXPERIENCE

### Singapore-MIT Alliance for Research and Technology Centre

*The only research centre outside the U.S. of MIT, ranked #1 university in the QS Rankings*

#### Machine Learning Engineer Intern

May 2024 – Aug 2024

- Developed a Computer Vision GAN model with PyTorch, with a maximum 64x downscaling (deblurring) factor
- Extracted and preprocessed 4 months of NetCDF4 data for model training
- Attained a 0.45°C Mean Absolute Error (MAE), significantly outperforming the 2°C MAE target
- Delivered 3 comprehensive reports and presentations, providing insights and recommendations
- Offered a part-time work opportunity

#### Data Analyst Intern | [PUBLICATION](#)

Jan 2024 – May 2024

- Performed data cleaning for large-scale environmental data collected over 8 months using Python Pandas
- Conducted statistical analysis, extracted 10+ key metrics, and created 15 visualizations for the paper
- Contributed to a successful publication to the Urban Climate Journal
- Secured an extended internship based on strong technical contributions

### Scala Center

#### Software Developer

May 2023 – Aug 2023

- Google Summer of Code 2023: http4s Ember WebSocket Client
- Implemented a full WebSocket API for http4s Ember—one of the most popular Scala web frameworks
- Empowered faster data transport and reduced CPU usage up to 30%
- Spearheaded and delivered all project deliverables within 3 months
- Presented project outcome to 50+ attendees at the Northeast Scala Symposium

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## AWARDS

### 1<sup>st</sup> Place – 17<sup>th</sup> NTU PEAK Leadership Programme: Sustainability | [MEDIA](#)

Jan 2025 – Mar 2025

*1-month Business Case Competition on Sustainability, partnered with 6 big companies including SATS and PwC.*

- Champion (out of 11 selected teams) for the NTU Peak Best Ideation Award
- Consulted for SATS, the world's leading provider of air catering services, in reducing single-use plastic
- Analyzed sustainability report data and conducted on-site assessments to identify process deficiencies
- Introduced 3 practical solutions to increase plastic recycling by 3 times and reduce plastic use by 50% in SATS internal operation
- Delivered final presentation to 100+ attendees, including stakeholders and industry professionals

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## PROJECTS

### Visualizing IMDb Rating Trends for TV Series

*Charts displaying TV series rating trends across all seasons, including over 20,000 series and 700,000 episodes*

#### 1. **SquerryDB:** Full-end web application | [LINK](#)

Jan 2025

- Filtered Big Data (11 million entries) using Pandas to enable efficient data handling
- Backend: PostgreSQL database, GraphQL API using Strawberry, FastAPI backend integration
- Frontend: Responsive design with Next.js, React, TypeScript, interactive chart with Recharts and Shadcn
- Deployed the database, backend, and frontend application on Railway, ensuring end-to-end functionality

#### 2. **imdb-tableau:** Tableau Dashboard | [LINK](#)

Jul 2024

- Filtered Big Data (11 million entries) using Pandas to enable efficient data handling
- Conducted data modelling to relate data tables and launched an interactive Tableau Dashboard

### Personal Blog: Analyzing My 6-year Spotify Streaming History | [LINK](#)

Oct 2024

- Built a responsive portfolio website with React and JavaScript
- Collected and transformed 6-year JSON data with Pandas
- Uncovered listening activity trends and created 10 unique visualizations with Plotly for the blog post