

BRITNEY SAW YU XUAN

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EDUCATION

National University of Singapore (NUS)

Aug 2021 – Jul 2025

Bachelor of Science (Hons) in Data Science and Analytics

- NUS Merit Scholarship
- Dean's List AY22/23 (Top 5% of cohort)

Eindhoven University of Technology (TU/E), Netherlands

Feb 2024 – Jul 2024

Student Exchange in Mathematics and Computer Science

- Modules in Data-Driven AI, Time Series Forecasting and Financial Mathematics
- Researched statistical processes to model emergency ambulance response and optimize deployment

WORK EXPERIENCE

Data Science Intern, Holmusk

Aug 2024 – May 2025

- Optimized 100+ Python, R and SQL queries for Holmusk's healthcare analytics platform, improving performance, reliability, and end-user data workflows
- Automated and performed quality assurance on Python/R technical documentation using shell scripting and Sphinx library, improving platform maintainability and internal knowledge sharing on Github Wiki
- Implemented explainable AI (SHAP, DALEX) to deliver interpretable data-driven model insights for researchers and business stakeholders to perform predictive analytics
- Refactored SQL pipelines into PySpark on Databricks, improving internal research workflow efficiency
- Led migration of package management from pip to uv, cutting development setup time by > 50%

PROJECTS

Carpark Occupancy Simulation Dashboard, NUS

Aug 2023 – Nov 2023

- Led 8-person team to build interactive R Shiny dashboard with geospatial visualization (Leaflet), featuring map markers that show occupancy rates for season/visitor lots across six NUS carparks
- Applied user-centered design principles and iterated on stakeholder feedback to optimize layout, color coding, and interactive controls for non-technical users, earning positive feedback for visually appealing UI
- Integrated discrete-event simulation model to forecast occupancy, simulate closures, and evaluate lot allocation strategies, translating results into actionable insights that improved operational planning efficiency
- Dockerized frontend and backend for reproducible deployment and integrated simulation workflows

Travel Expenses Dashboard

Jun 2025 – Aug 2025

- Cleaned multi-currency transaction data in Excel, resolving inconsistencies and handling missing values
- Engineered additional fields such as geographic identifiers to enable richer analysis
- Built an interactive Tableau dashboard with maps, line charts, and Top-N breakdowns, delivering insights on travel patterns and spending distribution across countries, cities, and categories

Telecom Network Fraud Detection with Graph Neural Networks (AI)

Feb 2025 – Apr 2025

- Designed a GNN fraud detection system on multi-million record telecom data during an 8-week hackathon
- Conducted exploratory data analysis (EDA) and anomaly detection to identify fraud patterns across calls, SMS, and app usage
- Created network visualizations with Pyvis to highlight user interactions and fraud patterns
- Engineered graph-based features and trained ensemble models (CARE-GNN), achieving AUC 0.9534
- Utilized Python libraries including pandas, numpy, networkx, PyTorch, scikit-learn, matplotlib, seaborn, and shap for data processing, modeling, and visualization

SKILLS

- Programming Languages and Tools: Python, R, SQL, PySpark, GitHub, Git, Java
- Visualization and Analytics: R Shiny, Tableau, Leaflet, Pyvis
- Machine Learning: Supervised/Unsupervised learning, ML applications, Model Explainability, NLP
- Statistical Analysis: Multivariate Analysis, Markov Chains, High Dimensional Data Techniques
- Languages: English, Mandarin, Cantonese, Spanish (Elementary)