

Tan Wee Han

• Mobile: 83821568 • Email: weehan1998@gmail.com • Nationality: Singaporean

EDUCATION

NATIONAL UNIVERSITY OF SINGAPORE, Master's in Data Science and Machine Learning

Aug 2023 – Present

Modules taken: Introduction to Big Data for Industry, Principles of Machine Learning, Deep Learning and Applications, Applied Regression Analysis, Principles of Data Management and Retrieval (SQL), Optimization Algorithms for Data Modelling

NATIONAL UNIVERSITY OF SINGAPORE

Aug 2019 – Aug 2023

Bachelor of Science in Mathematics

Double Major in Mathematics and Statistics. Minor in Psychology

CAP: 4.60

Modules taken: Real & Complex Analysis, Ordinary & Partial Differential Equation, Stochastic Processes, Regression, Statistical Learning, Time Series Analysis, Multivariate Statistical Analysis, Financial Mathematics

WORK AND INTERSHIP EXPERIENCES

Singapore Airlines, Customer Experience Business Analyst (Data Science)

May 2023 – Present

- Develop and maintain Tableau dashboards, leveraging SQL through Redshift enabling the identification of emerging travel patterns and evolving passenger preferences.
- Used machine learning and statistical modelling for quantitative data in customer datamarts, including K-Means clustering and Random Forest to derive insights for Business Units
- Develop text analytics tools using GenAI API (e.g., Claude, ChatGPT) increasing accuracy from 75% to 98% compared to traditional methods. Insights at Steering Committee to guide strategic initiatives

QuantFood, Data Analyst Intern

Jul 2021 – Aug 2021

- Delivered weekly updates of operations and sales, explaining the efficiency of the business
- Conducted Marketing Analytics and Market Basket Analysis in Python to better understand customer's profile
- Created impactful market reports with data visualization using Tableau

Situated Goal Pursuit Lab, Research Assistant

Dec 2019 – Aug 2020

- Spearheaded field work in a 2 years longitudinal study in career development funded by SkillsFuture (SSG-WSG)
- Conducted data modelling with Structural Equation Modelling using R
- Developed quantitative assessment survey using Qualtrics and executed data collection for over 200 participants via Zoom

Projects

Custom Neural Network Framework & GPT Model Implementation

Jun 2024 – Jul 2024

- **Built PyTorch style neural network from scratch** using only NumPy, implementing automatic differentiation with dynamic computation graphs and memory-optimized backward propagation.

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- **Developed a full-featured GPT language model** with multi-head self-attention, layer normalization, and causal masking for sequence modeling, achieving text generation capabilities.

Singapore Airlines Customer Segmentation

Jan 2024 – Jun 2024

- Conducted segmentation analysis leveraging customer travel patterns and demographic data to identify distinct customer profiles
- Applied machine learning techniques including K-Means clustering and Principal Component Analysis (PCA) to derive insights and inform targeted marketing strategies

Singapore Airlines Customer Value Driver Analysis

Oct 2023 – Jun 2024

- Conducted a comprehensive Customer Value Driver Analysis for Singapore Airlines to identify, prioritize, and improve the key factors impacting Net Promoter Score (NPS)
- Utilised Hadoop and Pyspark for large dataset analysis
- Employing various statistical methods (e.g., Regression, Random Forest) to isolate high-impact value drivers and computing churn probabilities

Honours Final Year Project

Aug 2022 – Apr 2023

- Research on Reinforcement Learning Algorithms in multi-agent game theoretic settings
- Utilized Python with Numpy to implement various learning algorithms from scratch
- Derive analytical solutions to evolutions of learning algorithms such as Dynamical Systems.

CO-CURRICULAR ACTIVITIES

NUS Psychology Society, Academics Director

Aug 2019 – Sep 2020

- Organized tours to St Andrew's Autism Centre that is participated by more than 200 Psychology Students.
- Manage the NUS Psychology Society's Website that has a monthly viewership of more than 1000 people.

ADDITIONAL INFORMATION

- **Programming languages:** Python, C++, JavaScript. React, Excel VBA
- **Database:** SQL, Google Firebase
- **Software and Tools:** Unix/Linux environment, Version Control via Git/GitHub, LaTeX
- **Data Visualization tools:** Tableau, ggplot with R
- **General statistical packages:** SPSS, R, Alteryx
- **Project Management Tools:** Jira