

EDUCATION

Nanyang Technological University

Aug 2023 – May 2027

- Bachelor of Electrical and Electronic Engineering, CGPA: 4.86/5.00, Honors (Highest Distinction)
- Specialization in Data Science and Machine Learning | **Dean's List (2024)**
- **NTU Science & Engineering Undergraduate Scholarship Recipient**
- Presenter at **The International Conference of Undergraduate Research (ICUR) 2025**
- Relevant Modules: (1) *Introduction to Data Science and Artificial Intelligence* [Python]
(2) *Data Structures & Algorithms* [Python] (3) *Designing and Developing Database* [MySQL, NoSQL]

SKILLS

- **Software Programming:** Python, R, C Language
- **Database:** MySQL, NoSQL, MongoDB
- **Software Applications:** Figma, Jupyter Lab
- **Cloud & Big Data:** AWS S3, Sagemaker, Boto3, PySpark

RESEARCH & INTERNSHIP EXPERIENCE

GlobalFoundries, Data Scientist Intern

May 2025 – Dec 2025

Project 1: Scalable Data Pipeline & Compression

- Developed modular data pipelines for multi-month trace data processing with **AWS S3, Boto3, PySpark**, optimizing query performance.
- Implemented Parquet and Snappy compression techniques to improve retrieval speed and efficiency for high-volume semiconductor datasets.
- Reduced extraction runtime from hours to 4–8 mins; cut storage by 90%; eliminated session timeouts.

Project 2: Trace-to-Image Machine Learning Pipeline for Fault Detection

- Developed a novel trace-to-image machine learning pipeline, converting raw process data into image representations to address limitations in traditional Fault Detection and Classification (FDC) methods.
- Achieved baseline model accuracies of 93.3%, 97.3%, and 92.7% across three distinct tool types, successfully demonstrating a significant performance improvement over conventional guard band method.
- Engineered a modular and scalable classification pipeline, incorporating hyperparameter tuning frameworks (Optuna, Keras-Tuner) to optimize model performance for diverse industrial applications.

A*STAR, Healthcare Data Pre-Processing Research Intern

Jan 2025 – Apr 2025

- Supported the project "National Healthcare Group (NHG): Validating an AI Facial Health Screening Product with A*STAR", developing data preprocessing workflows to anonymize sensitive healthcare datasets while ensuring compliance with regulations.
- Conducted feature preservation analysis and collaborated with the AI research team to optimize preprocessing methods for model performance.

Shanghai DAOBI Education Technology Co., LTD(Classbro), Data Science & Machine Learning Instructor

Jun 2024 – Dec 2024

- Delivered lectures on data science fundamentals, SQL, machine learning algorithms, contributing to the company's revenue growth of **10,000 SGD+**.

ACADEMIC PROJECTS / MODULE PROJECTS

AI & Machine Learning Projects:

URECA Project: *AlzCare Smart Watch (In Progress)* (**Team Leader** of 3 Members)

Aug 2024 - Present

- Spearheading a team to develop an AI-powered wearable device for dementia patients that integrates real-time health monitoring, fall detection, geofencing, reminder and caregiver alerts.
- Implementing AIML models for behavioural analysis and geofencing to enhance patient care.
- Collaborating with SG Jamiyah Nursing Home to test and refine device features in real-world conditions, while also seeking further partnership with SG DementiaHub for broader dementia care adoption.

NTU Module: *Introduction to Data Science and Artificial Intelligence*

Feb 2024 – Apr 2024

Module Project: Hotel Booking Trends and Cancellation Forecast (**Team Leader** of 4 Members)

- Led a team of 4 in applying **Python** Programming with 4 **Machine Learning** Models to analyse a Kaggle dataset, achieving an 86.6% accuracy with Random Forest.
- Applied One-hot encoding, K-Fold Cross Validation, and TensorFlow optimization (incorporating Adam Optimizer, Neural Network Model, L2 regularization, Batch Normalization), achieving a 91% accuracy.
- Delivered actionable insights through data visualization, showcasing a 5% increase in predictive accuracy over standards.

LEADERSHIP / CO-CURRICULAR ACTIVITIES / COMMUNITY INVOLVEMENT / VOLUNTEERISM

NTU Institution of Engineering and Technology (IET), Liaison Manager

Jul 2024 – Present

NTU Investment Interactive Club (IIC) Investment Academy, Member

Jul 2024 – Present

CFLS Model United Nation Club (CFLS-MUN), Academic Director

Dec 2019 – Dec 2021

- Hosted the North-East MUN Conference(**1,000+** participants) as **Chairman**.
- Led delegations to World MUN and Yale MUN, proposing draft resolutions.
- Instructed **100+** members in CFLS-MUN about conference processing and document writing.