

TAN YU HOE

Singapore

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WORK EXPERIENCE

SAF Detention Barracks

Singapore

Detention Military Police (NS)

Feb 2024 – Aug 2025

- Responsible for detainee management operations, safeguarding detainees discipline, safety, and well-being.
- Appointed Unit Safety Advocate (secondary appointment), contributing to the strengthening and improvement of SAFDB safety culture.

GovTech DSAID (Data Science and AI Division)

Singapore

AI Engineer Intern

Apr 2022 – Jun 2023

- Main engineer for photo relevance study in municipal feedback cases for MSO (Municipal Services Office). Proposed and developed an Image Relevance model using zero-shot image classification and embedding similarity methods. Achieved 97% accuracy without model training.
- Evaluated the performance of zero-shot visual-language models (CLIP and OWL-ViT) as general-purpose computer vision capabilities, for visual recognition use cases with limited labelled data.
- Implemented interactive web interfaces and backend APIs for zero-shot object detection, using Gradio, FastAPI, PyTorch, Docker, and HuggingFace transformer SDK.
- Comparison study between MMDetection framework and YOLO Darknet framework for pedestrian pathway object detection.
- Presented multiple knowledge-sharing sessions on open-vocabulary models, visual-language pretraining (VLP) models, and self-supervised learning (SSL).

EDUCATION

National University of Singapore

Singapore

Bachelor in Science (Honours), Business Analytics

Aug 2025 – Jul 2028

- Specialization in Machine Learning Analytics
- Minor in Statistics

College of Alice and Peter Tan

Singapore

University Town College Programme in NUS

Aug 2025 – May 2027

- UTC1409 The Pursuit of Happiness
- CAPT Renew Engager
- House Committee - Member

Singapore Polytechnic

Singapore

Diploma in Applied AI and Analytics

Apr 2020 – May 2023

- **Honors:** 3.81 / 4.0 GPA
- **Courses:** Statistics, Python for Data Analytics, AI & Machine Learning, Deep Learning
- **CCA Grade:** Gold with Honours
- **Distinctions:** ST0503 Back-End Web Development, ST1511 AI and Machine Learning, ST1504 Deep Learning, ST3004 Infocomm Professional Seminar

LEADERSHIP AND ACTIVITIES

SP Artificial Intelligence Student Chapter

Singapore

Operations Head

Dec 2020 – Mar 2022

- Led a project team that developed a headline-based fake news detection application for showcase in Singapore Polytechnic's Open House and Engineering Show 2022
- Orchestrated a Kaggle competition on a curated dataset with real-world applications, attracting 70+ participants and fostering skill development in machine learning and data analysis techniques

- Curated teaching materials and taught concepts on Data Science workflows and Machine Learning concepts for two data-science-related workshops

PROJECTS

CAPTuring Dreams

Volunteer Mentor

Oct 2025 – Present

- Mentoring secondary school students from low-income families to achieve their aspirations through guidance and support
- Conducting regular mentoring sessions to provide personal development support
- Organizing workshops and activities to enhance mentees' skills and confidence

Meals with Wheels

Volunteer Lead

Aug 2022 – Oct 2022

- Liaising between Singapore Polytechnic and TOUCH Community Services
- Developing and implementing logistical plans for meal delivery routes
- Prioritizing the safety of volunteers and elderly recipients, strictly adhering to COVID-19 (Temporary Measures) Regulations 2022

HONORS AND AWARDS

NUS LifeHack 2023 - First Place + sgID Award

Singapore

Issued by *NUS Computing Club*

Jun 2023

- Won first place and sgID Award (bonus) by Open Government Products
- Developed AquaWise, an AI-powered Sustainable Shopping Companion focused on promoting mindful consumption practices among consumers by integrating with popular e-commerce platforms, such as Shopee.

WPH Digital Hackathon 2022 - Second Place Award

Singapore

Issued by *WPH Digital*

Apr 2023

- developing an innovative solution to streamline CV screening, addressing the inefficiencies in identifying top talent. Collaborated with a team of tech enthusiasts to create a transformative tool that simplifies the hiring process, showcasing problem-solving skills and a commitment to reshaping the future of the job market.

LICENSES AND CERTIFICATIONS

Google Data Analytics

ID: 5D46PZTLVV9Q

Issued by *Cousera*

Apr 2023

Google IT Automation with Python

ID: 878DAB3LU5FY

Issued by *Coursera*

Jan 2023

NVIDIA - Fundamentals of Deep Learning

ID: 1-emxFVgQeCHCjNv8HtyXg

Issued by *NVIDIA*

Feb 2022

AI FOR INDUSTRY® - Foundations in AI

ID: 46333377

Issued by *AI Singapore*

Feb 2022

Microsoft Certified: Azure AI Fundamentals

ID: 9c58eb07-5936-448e-bbe0-2cf45b97d610

Issued by *Microsoft*

Jun 2021

SKILLS, LANGUAGES, INTERESTS

- **Languages:** English (Native Speaker), Chinese (Native Speaker)
- **Programming:** Python, SQL, Javascript, R
- **Tools:** Git, GitHub, Docker, Visual Studio Code, Ubuntu/Linux
- **BI & Data Analytics:** Tableau, Jupyter Notebook, Numpy, Pandas, Matplotlib/Seaborn, Plotly, Statistics, RStudio
- **Machine Learning:** Scikit-Learn, TensorFlow, PyTorch, PyTorch Lightning, HuggingFace, MMDetection