Brian Tham

AI Research Student and Applied Artificial Intelligence undergraduate at Singapore Institute of Technology Singapore

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Upcoming Internship

A*STAR Research Intern - Deep Learning for Image Super-resolution and Denoising
Agency for Science, Technology and Research (A*STAR); Institute for Infocomm Research (I2R), Singapore
A*STAR Research Internship Award (ARIA)   **September 2025 - April 2026**

Education

Bachelor of Science with Honours in Applied Artificial Intelligence
Singapore Institute of Technology, Singapore   **August 2023 - Present**
- GPA: **4.36/5.00**
- Relevant Coursework:
    - Machine Learning **(A+)**; Mathematics 1 & 2 **(A+)**; Data Structures and Algorithms **(A)**; Introduction to Computer Systems **(A)**; Programming Fundamentals **(A)**; Data Engineering and Visualization **(A)**; Ethics and Professional Conducts **(A)**; Computer Vision and Deep Learning **(A-)**

Diploma in Information Technology   **April 2018 - April 2021**
Singapore Polytechnic, Singapore
- Relevant Coursework
    - Artificial Intelligence & Machine Learning **(B+)**

Research Interests

- Quantum Computing and AI Integration
- Recommender Systems
- Computer Vision
- Large Language Models
- Graphics Processing Units (GPUs) and AI
- AI Model Protection and Security

Professional Experience

Research Student on AI Model Protection   **September 2024 - December 2024**
Singapore Institute of Technology, Singapore
- Conducted research on protecting deep neural networks against model extraction attacks
- Performed comprehensive literature review on AI model protection techniques
- Implemented and evaluated UNet model for brain MRI segmentation vulnerability analysis

Admin Support Assistant   **October 2021 - August 2023**
Ministry of Defence of Singapore, Singapore
G1-Army, Requirement & Allocation branch
- Automated data processing & visualisation in PowerBI and Excel
- Maintained & updated VBA scripts for automated data cleaning
- Extraction and cleaning of data for analysis to draw insights

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Digital Learning Intern   **September 2020 - February 2021**
Lee Kong Chian School of Medicine, Novena, Singapore
Enhancing Medical Education Through Art, Design and Media
- Improved student test scores by 20% through e-learning courseware development
- Digitized reference materials using Google Sites for improved accessibility
- Created educational content including 2D/3D illustrations and animations

Projects

Profanity Detection - A robust multimodal system for detecting and rephrasing profanity
- **Multimodal Analysis:** Process both written text and spoken audio
- **Context-Aware Detection**: Goes beyond simple keyword matching
- **Automatic Content Refinement**: Intelligently rephrases content while preserving meaning
- **Audio Synthesis**: Converts rephrased content into high-quality spoken audio
- **Cloud Deployment**: Available as a hosted service on Hugging Face Spaces
- **Technologies**: OpenAI's Whisper, Microsoft's SpeechT5, PyTorch
- **Demo**: https://nightey3s-profanity-detection.hf.space
- **GitHub**: https://github.com/Nightey3s/profanity-detection

FoodVision - Deep Learning Food Detection System
- Developed real-time food detection system using YOLOv8 with 55-class classification
- Created web-based demo interface for real-time detection
- **Technologies**: YOLOv8, PyTorch, Deep Learning
- **Demo**: https://nightey3s-foodvision.hf.space
- **GitHub**: https://github.com/Nightey3s/FoodVision

Speech Emotion Recognition using Wav2Vec2
- Implemented emotion recognition system for four categories using Wav2Vec2
- **Technologies**: PyTorch, Wav2Vec2, Python, Deep Learning
- **GitHub**: https://github.com/Nightey3s/Speech-Emotion-Recognition-using-Wav2Vec2

Technical Skills

- **Programming**: Python, C#, R
- **Machine Learning**: PyTorch, TensorFlow, Scikit-learn, Keras
- **Data Analysis & Visualization:** Matplotlib, RStudio, PowerBI, VBA
- **Cloud Platforms:** Google Cloud Certified - Professional Machine Learning Engineer, HuggingFace ZeroGPU spaces
- **DevOps & Tools**: Docker, Git
- **Web Development**: HTML, CSS, JavaScript

Certifications

Google Professional Machine Learning Engineer	October 2024
Google Business Intelligence	June 2024
Google AI Essentials	May 2024
AI4I® – Proficiency in AI	April 2024
Google IT Automation with Python	March 2024
WQU Applied Data Science Lab	February 2024
Google Advanced Data Analytics	December 2023
Google Data Analytics	November 2023
AI4I® – Foundations in AI	August 2023

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