

# Brian Tham

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

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Portfolio: <https://tham.ai>

## Upcoming Internship

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**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

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### **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**

Singapore Polytechnic, Singapore

April 2018 - April 2021

- Relevant Coursework
  - Artificial Intelligence & Machine Learning (B+)

## Research Interests

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- 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

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### **Research Student on AI Model Protection**

*Singapore Institute of Technology, Singapore*

September 2024 - December 2024

- 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**

*Ministry of Defence of Singapore, Singapore*

*G1-Army, Requirement & Allocation branch*

October 2021 - August 2023

- 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

## 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

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### 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

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- **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

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