**SHEN SHU HSUAN**

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## *EDUCATION*

**Singapore Management University** **Jan 2024 - Jul 2025**
**Master of IT in Business** (Artificial Intelligence Track)

- Awarded the MITB SCHOLARSHIP

**National University of Singapore** **Aug 2019 - Jun 2023**
**Bachelor of Engineering in Biomedical Engineering, Honors**

## *EXPERIENCE*

**Data Analyst | National University Health System** - Singapore **Sep 2023 – Feb 2024**

- Developed Healthier SG dashboard. Creation of interactive visualizations to enable data-driven decision-making.
- Automated dataset cleansing and integration using Python, reducing processing time from hours to minutes for datasets over 1 million rows.
- Delivered actionable insights through Python scripts, enhancing health policy and operational decisions.

**Engineering Intern | Abbott** – Singapore **Jan 2022 - May 2022**

- Optimized material usage, reducing costs by 10%, contributing to overall productivity gains.

## *PROJECTS*

**Spotify-to-MP3 Playlist Downloader**

- Automated an end-to-end pipeline in Python to extract Spotify playlist data, match tracks on YouTube via API calls, and download MP3 files using ffmpeg
- Designed modular components for scalability, including API integration, data processing, and audio conversion
- Utilized tools like yt-dlp, pandas, and Git to streamline development and data management

**Flappy Bird AI with NEAT Algorithm**

- Developed an AI-powered Flappy Bird game in Python using Pygame, incorporating neuro-evolution with NEAT to train neural networks for gameplay optimization.
- Implemented modular components for object-oriented game mechanics, including bird physics, pipe generation, and collision detection.
- Designed and fine-tuned fitness functions to evolve AI agents over generations, leveraging NEAT-Python for efficient decision-making.

**Fighting AI Hallucinations for Medical Practitioners**

- Developed a solution addressing AI hallucinations in medical applications using the MedHALT dataset by domain-specific pretraining and Retrieval-Augmented Generation (RAG)
- Improved the model accuracy and F1 from 72% to 94% in None of The Above test, enhancing trust in AI for healthcare professionals

**Medical Image Semantic Segmentation**

- Utilized Convolutional Neural Networks (CNNs), including UNet, ResNet architectures, to develop a robust classification and segmentation model for CT scans.
- Experimented with various image augmentation techniques, loss functions, and hyperparameters, achieving a segmentation accuracy of 0.88 mIoU.

## *ADDITIONAL*

**Programming Skills:** Python
**Machine Learning Skills:** Pytorch, Applied Machine Learning, NLP, LLM (RAG), CNN, Computer Vision
**Other Technical Skills:** Linux, Algorithm Design, Tableau
**Language Skills**: English, Mandarin, Cantonese