

LOUIS TAI

louistzx@u.nus.edu | +65 96530481 | [LinkedIn](#) | [GitHub](#)

EDUCATION

National University of Singapore

Aug 2023 - Present

Bachelor of Engineering - Computer Engineering (Minor in Management)

- **Expected graduation:** May 2027
- **Honors:** Second Upper
- **Relevant courses:** EE2211 (Intro to Machine Learning): A+, CS2040C (Data structure & Algorithms), CS2113 (Software Engineering & Object-Oriented Programming), EE2026 (Digital Design)

SKILLS SUMMARY

- **Languages:** C, C++, Java, Python, HTML, CSS, Jscript, Verilog
- **Frameworks:** Pandas, Numpy, Matplotlib, Transformers, Diffusers, PyTorch, Flask
- **Tools:** SolidWorks, Altium, MATLAB, Git
- **Embedded systems:** Arduino, ESP32, Raspberry Pi

PROJECTS

AI Influencer | [LINK](#)

- Leveraged PyTorch to develop and manage an AI-driven Instagram influencer.
- Trained a Stable Diffusion model using Kohoya to generate high-quality, photorealistic images with consistent facial features.
- Engineered an automated prompt generation system to enhance image diversity and variation.

Full-stack Productivity Application | [LINK](#)

- Submission for NUS Hack4Good 2025.
- Developed a full-stack productivity application for the Singapore Book Council in 3 days.
- Developed in Python and Flask.
- Integrated Hugging Face's Transformers and Google's Flan-T5 LLM for advanced features, including email summarization, to boost user productivity.
- Integrated Microsoft Graph API to enable seamless management of To-dos, calendars, meetings, and emails from Microsoft accounts.

AR Glasses for the deaf and mute | [LINK](#)

- Submission for Huawei Tech4City 2024.
- Designed augmented reality glasses that enhances the communication capabilities for the hearing and speech Impaired.
- Leveraged MediaPipe for hand gesture recognition using Machine Learning.
- Integrated Huawei Cloud APIs to offload tasks, minimizing hardware requirements.
- Designed hardware architecture centered around RPi Zero and Seeed XIAO Arduino boards.

DSTA Brainhack SeeTrue 2024

- Competed in a national-level hackathon, developing AI-driven solutions for misinformation detection.
- Worked alongside peers and industry mentors to address real-world challenges in AI-generated misinformation.
- Gained hands-on experience with Stable Diffusion and ComfyUI to create images designed to evade AI detection systems.

AI video summarizer | [LINK](#)

- Transcribed video audio using OpenAI Whisper.
- Summarized transcription using Huggingface transformers summarization pipeline.
- Parsed longer texts by segmenting them and summarizing each part individually.

EXPERIENCE

NUS Formula SAE | [LINK](#)

Aug 2024 - Dec 2024

- Developed a custom charger for the NUS FSAE race car, improving heat performance and ergonomics while adhering to competition regulations.
- Gained hands-on experience in circuit board design using Altium and CAD modeling with SolidWorks.
- Acquired hands-on experience with manufacturing processes, including carbon fiber layup, drill press operation, sawing, and more.

Santarli Construction Internship

Dec 2019 - Dec 2019

- Participated in a large-scale land reclamation civil engineering project.
- Assisted with soil quality control and conducted on-site measurements to support project execution.