Hayson Cheung

Toronto, ON — hayson.cheung@mail.utoronto.ca — linkedin.com/in/hayson-cheung-3688a5241 — github.com/HaysonC — hayson.me

Cofounder & CTO — Machine learning models & computer vision; camera, embedded & wearable systems
Top skills: PyTorch · ML Theory & Implementation · Diffusion Models · OpenCV · RL · NLP · SoC

Skills

Top skills: **PyTorch**, **Transformers**, **Diffusion Models**, OpenCV, RL, NLP; camera/SoC inference, firmware-aware optimizations; Docker, AWS, React

Experience

EchoEye (echoeye.ca) Sep 2024 – Present
Co-founder & CTO *Toronto, ON*

- Co-founded and led a hardware-focused startup building smart computer-vision systems; won Rotman LYBI among 100+ teams.
- Designed edge-AI camera systems (SoCs, camera chipsets); integrated and optimized ML models for low-latency on-device inference on camera and wearable pipelines (quantization/pruning, model pipelining), and streamlined production handoffs.
- Built cloud/web infrastructure (Django, React, AWS) and instituted quarterly release cycles, reducing time-to-deploy by 30% and improving delivery predictability.

University of Toronto Machine Intelligence Student Team (UTMIST) Jan 2025 – Present
Engineering and Academics Lead *Toronto, ON*

- Led paper-reading sessions on **LSTM**, **RNN**, **Transformers**, and **NLP**; created demo notebooks to onboard members and accelerate projects — demos: LSTM, NEAT.
- Built reproducible RL training pipelines with **PyTorch** and **Stable-Baselines3 (SB3)**, improving experiment throughput and enabling Skysense to deliver actionable fleet-health predictions.

IC2, King Mongkut's University of Technology Thonburi (KMUTT) May 2025 – Aug 2025
Research Intern *Bangkok, Thailand*

- Developed a music latent-diffusion pipeline in **PyTorch** for generative audio; implemented Temporal Fusion Transformer models for automated trading research and built reproducible training/evaluation pipelines.
- Co-authored the SAMUeL preprint (arXiv:2507.19991); manuscript under review.

Yannes Solution Ltd. Jun 2024 – Aug 2024
Engineering Intern *Hong Kong*

- Built an OpenCV/TensorFlow image-processing system that tripled document processing speed and improved deployment workflows for 500+ CCTV installations.

Projects & Awards

LegoFiks — GenAI Genesis 2025 (Winner). Built a web app that generates LEGO builds from images using **Shap-E** and **Gemini**; led React/FastAPI/Docker stack and cut 3D inference time by 25%.

MapMatch — AWS Hack the Student Life (Winner). Implemented roommate-matching backend using **AWS Titan**, Python and NLP to improve match precision and enable campus deployment.

KMUTT Quant — Developed **Temporal Fusion Transformer** trading pipeline in **PyTorch**; produced above-market risk-adjusted returns in backtests.

Scholarships: MITACS Globalink (CAD 6,000); ESROP-Global (CAD 4,500).

Publications

H. S. Cheung, B. Zhang, and J. H. Chan, "SAMUeL: Efficient vocal-conditioned music generation via soft alignment attention and latent diffusion," Preprint (arXiv:2507.19991); under review, 2025. https://arxiv.org/abs/2507.19991

Education

University of Toronto
Bachelor of Applied Science in Engineering Science - Robotics Focus *Toronto, ON*