Steven Tin Sui Luo

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EDUCATION AND SKILLS

University of Toronto (St. George) - *Computer Science Specialist & Math Major*   📅 Sep 2021 - May 2025

- Dean's List Scholar
- Languages: Python, JS/HTML/CSS, SQL, WebGL/WebGPU, C/C++, Java, R
- Frameworks: Pytorch, Keras, Tensorflow, React
- ML Expertise: Computer vision, audio ML, explainable AI, neural fields, computer graphics

LEADERSHIP

VP of Engineering - *UofT Machine Intelligence Student Team*   📅 Aug 2022 – Sep 2023

- Managed a department with more than **70 people**, including 14 project directors and 11 projects ranging from applied, academic, and finance ML topics.
- Co-led 3 initiatives for the Engineering department: (1) company collaboration (e.g. providing ML solution to AltaML and Aercoustics) (2) front-end development team (3) EigenAI Conference (300 attendance)

PUBLICATIONS

Nonparametric Teaching of Implicit Neural Representations   **Co-author**

- Accepted as conference paper at ICML 2024

ASMR: Activation-sharing Multi-resolution Coordinate Networks For Efficient Inference   **Co-author**

- Accepted as conference paper at ICLR 2024

Task-Agnostic Approach to Modeling the Ventral and Dorsal Stream   **Co-author**

- Accepted as conference poster at MAIN 2022

EXPERIENCES

ML R&D Intern - *Vivid Machines*   📅 May 2024 – Present

- Iterated 3 **YOLO** models to production and reduced tree detection error from **50% to 15%** via data-cleaning and custom augmentations.
- Developed an MLOps pipeline for testing and continuous model training cycle. Reduced time-to-prod from 1 week to 1 day.

ML Research Intern - *University of Hong Kong (Ngai WONG)*   📅 May 2023 – May 2024

- Co-authored 2 papers, accepted to ICLR and ICML respectively.
- Co-designed hierarchical activation-sharing architecture that reduces the MAC of a SIREN model by up to $350\times$ with superior reconstruction quality.
- Discovered the $O(1)$ **inference cost** of activation-sharing and designed theoretical and empirical experiments on image, video, and 3D modalities

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Research Assistant - *UTSC CoNSens*   📅 Sept 2021 – Dec 2022

- Developed novel architecture and objective function. Achieved 80+% accuracy on both classification and grasping.
- Demonstrated that learnt representations are driven by task specification rather than network architecture with method such as **Neuron Shapley**, **Representational Similarity Analysis**, and **Guided Backpropagation**.

Summer ML Intern - *EN:ai, HK*   📅 May 2021 – Aug 2021

- Created hand detection and hand-keypoint detection model using **single-shot detector (SSD)** and **mobileNetV2** architecture with **TF2**, achieving **real-time inferencing (20+ fps)** on cpu and ready for post-training quantization.

OTHER PROJECTS

- On the Effectiveness of Grid-based Neural Fields (May 2024)
- Wind Turbine Audibility Classification (Dec 2023)
- Real-time Singing Voice Vocal Register Classification (Aug 2021)
- Novel Eye-to-face Synthesis with Standard Deviation Loss (Aug 2021)
- Novel Font Style Transfer Across Multiple Languages with Double KL-Divergence Loss (Aug 2020)
- Cantonese Lip Reading (Aug 2019)