

Education

Master of Science in Applied Computing Aug 2025 – Dec 2026 (expected)

University of Toronto, Department of Computer Science

- **Courses:** Foundations of Computational Vision, Deep Learning

Bachelor of Engineering, Materials Science and Engineering Aug 2016 – May 2020

National University of Singapore, Department of Materials Science and Engineering

- **Relevant Courses:** Data Structures and Algorithms, Computer Systems and Applications (Operating Systems), Executive Certificate in Machine Learning

Work Experience

GIC Pte. Ltd., Singapore Aug 2024 – Jul 2025

Data Engineer

- Built ETL pipelines and CI/CD deployment scripts to centralize financial instruments data processing from multiple sources using Amazon Web Services and Java Spring Boot, deployed on Kubernetes, and used by major downstream applications company-wide.
- Enhanced a highly concurrent FastAPI Python application for data reconciliation to maintain data quality across 100+ tables, reduced script runtime from 3 days to 4 hours per run, enabling checks to run multiple times daily instead of weekly.
- Developed a full-stack web application as an internal tool for production support.

TikTok Pte. Ltd., Singapore Jul 2023 – Aug 2024

Front-End Engineer

- Created a React webpage within the TikTok App, enabling creators to track their TikTok Shop affiliate performance, accessed by millions of monthly active users.
- Served as front-end lead for the partner.tiktokshop.com data dashboard, reviewed pull requests, enabled grayscale deployment through CI/CD script, and addressed periodic user feedback, achieving high user growth in new markets.
- Leveraged internal build tools and infrastructure to support multi-region deployments. Utilized front-end data collection frameworks and Apache Hive interface to develop production monitoring dashboards.

DBS Bank, Singapore Jul 2021 – Jul 2023

Full-Stack Engineer

- Leveraged Camunda with Java Spring Boot to orchestrate workflows and manage subsystem API calls in a nationwide branch banking system designed for bank tellers and managers.
- Integrated the Teller Assist Unit physical hardware with the application, using REST API to trigger device actions, RabbitMQ and WebSocket for real-time event communication.
- Advocated for reusable front-end React components by gathering cross-team requirements and maintaining widely used components, reducing development time for common components from one week to one day.

Coursework

Foundations of Computer Vision Sep 2025 (Ongoing)

- Trained, fine-tuned, and evaluated state-of-the-art computer vision architectures, including CNNs, Transformers, and GANs
- Utilized Slurm-managed GPU clusters for large-scale model training and experimentation
- Currently developing a final project integrating 3D inference techniques such as VGGT and Random Network Distillation for applications in autonomous navigation systems

Publications

Intermixing induced anisotropy variations in CoB-based chiral multilayer films

- As part of a final-year research project, fabricated thin-film samples and analyzed their magnetic hysteresis loops and magnetic force microscopy (MFM) images.
- Developed a Python script to automate the calculation of sample K_{eff} .
- Awarded the Materials Research Society Singapore Medal for Best Project in the cohort.

H. K. Tan, R. J. J. Lim, H. L. Seng, J. Shanmugam, H. Y. Y. Ko, X. M. Cheng, V. Putra, Z. X. Xing, A. Soumyanarayanan, and P. Ho, "Intermixing induced anisotropy variations in CoB-based chiral multilayer films," *J. Phys. D: Appl. Phys.*, vol. 54, no. 35, Art. 354003, 2021. doi: 10.1088/1361-6463/ac09b6

Skills

Languages: Python, SQL, Java, TypeScript / JavaScript

Technologies & Frameworks: PyTorch, OpenCV, NumPy, FastAPI, Kubernetes, Docker, Spring Boot, React

Awards

- 2x Dean's List (top 5% of students) throughout undergraduate study
- ASEAN Scholarship: a full scholarship with stipend for undergraduate studies.
- Bronze medalist at the International Chemistry Olympiad (IChO) Azerbaijan, 2015.