Cheyenne Goh, EIT

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EDUCATION

Master of Science in Artificial Intelligence and Machine Learning **Aug 2025**
University of Limerick – Limerick, Ireland QCA: 4.00/4.00

- **Modules:** Data Engineering and Machine Learning, Evolutionary Computation and Humanoid Robotics, Text Analytics and Natural Language Processing, Artificial Intelligence for Games, Machine Vision
- **Awards:** University of Limerick Postgraduate Scholarship for International Students

Bachelor of Science With Distinction in Software Engineering **May 2024**
Schulich School of Engineering, University of Calgary – Calgary, AB GPA: 3.50/4.00

- **Minor:** Mechatronics
- **Coursework:** Software Requirements/Architecture/Development/Testing/Performance Evaluation, Database Management Systems, Data Structures and Algorithms, Computer Graphics, Machine Learning, Operating Systems, Computer Networks, Embedded System Interfacing, Digital/Electrical Circuits, Signals and Transforms, Control Systems, Mechatronics, Robotics, Mechanics (Statics/Dynamics), Project Management, Professional Technical Communication
- **Awards:** 2021/2022 Schulich School of Engineering Dean's List, Schulich School of Engineering Dean's Entrance Scholarship, Alexander Rutherford Scholarship, University of Calgary Entrance Scholarship

Certifications

- Machine Learning – *DeepLearning.AI, Stanford University (Coursera, 2023)*
- C# Programming for Unity Game Development – *University of Colorado System (Coursera, 2023)*

EXPERIENCE

Research Intern **Nov 2024 – Present**
University of Limerick – Limerick, Ireland

- Joined the Biocomputing and Development Systems (BDS) Group in Lero to research the application of Grammatical Evolution in evolving machine learning models as GPU programs, with a focus on the evolution of NVIDIA CUDA kernels in C

GPU Compute Software Intern **May 2022 – Aug 2023**
Advanced Micro Devices, Inc. (AMD) – Calgary, AB

- Contributed features and bug fixes to rocFFT/hipFFT, an open-source C++ maths library for computing Fast Fourier Transforms in the ROCm GPU software stack for AI, Machine Learning, and High-Performance Computing
- Reworked method for testing inverse Fourier transforms in the rocFFT GoogleTest test suite to yield a 10% improvement in the overall test run time by adding asynchronous optimizations and reducing external library calls
- Prototyped compute kernels with Python and C++ to improve performance of real-complex transforms in rocFFT and presented a display on the topic as a finalist for the 2023 AMD Canada Innovation Showcase in Markham, ON
- Incorporated utility in the rocFFT performance testing Python script for measuring raw bandwidth efficiency and processing the data to determine median duration and efficiency
- Validated rocFFT/hipFFT library on AMD RDNA3 hardware, ensuring adequate functionality and performance on both Linux and Windows operating systems prior to global product launch

Design Engineering Summer Intern **May 2021 – Sept 2021**
Flexcim Manufacturing Services Inc. – Edmonton, AB

- Developed a Python program to retrieve Human-Machine Interface inputs and Programmable Logic Controller sensor data from plastic injection molding machines and display data from MySQL on the HMIs via Modbus TCP
- Integrated functionality in the program to continually collect hundreds of data entries daily for every injection moulding cycle in a MySQL database for analysis to assist in optimizing production
- Performed a complete software rewrite of a dated DOS operations tracking program using the Python Tkinter GUI toolkit and a MySQL database to improve usability, maintainability, and portability

SKILLS

- **Languages:** Python, C/C++, C#, Java, JavaScript, MATLAB/Simulink, MIPS Assembly, PLC Ladder Logic, HTML/CSS, SQL, UML, LaTeX
- **Technologies:** TensorFlow, PyTorch, CUDA, HIP, Vulkan, GLSL, CMake, React, Unity, Processing, MySQL, Git, Linux, PIC Microcontroller, Arduino, QUARC, Quartus, ModelSim, SolidWorks
- **Concepts:** Machine Learning, GPU Programming, Concurrent Programming, Graphics Programming, Object-Oriented Programming, Machine Vision, Control Systems, Robotics, Evolutionary Computation

PROJECTS

Capstone Design Project – Sponsored by Garmin **Aug 2023 – Apr 2024**

- Teamed up with three fellow students to design a system that recognizes four distinct hand gestures from sensor data from a Garmin Venu 2 Plus smartwatch and performs associated actions on an Android device
- Led the development of a machine learning model by building a Convolutional Neural Network with PyTorch, training the model with sensor data collected by team members, and integrating the model in the Android application using TensorFlow Lite, resulting in a model with over 99% accuracy
- Awarded second place out of 25 final year projects in the Software Engineering category at the University of Calgary's 2024 Engineering Design Fair

Hack Your Learning Hackathon **Mar 2021**

- Built a user-friendly application that facilitates supply chain management of furniture inventory in a MySQL database
- Collaborated remotely in a team of four using Java to receive requests, compute the most cost-effective order fulfilment, modify the database, and produce an order form
- Presented a brief video demonstration to a panel of five judges and made appropriate UX revisions based on feedback provided by industry experts from Canada, Greece, and the United States.

INVOLVEMENT

Olympic Short Track Speed Skating Athlete **Oct 2012 – Feb 2021**

- Represented Singapore in the 1500-m short track speed skating event at the PyeongChang 2018 Olympic Winter Games
- Trained 30-40 hours per week for three years with Olympic Oval Elite Athlete Pathway Programme as a full-time student