

# Cheyenne Goh

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## SUMMARY

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Software developer with 2+ years of professional and internship background using Python and C++. Served at organisations of varying scales in the manufacturing, semiconductor, and automotive industries. Holds an undergraduate degree in software engineering from the University of Calgary and a master's degree from the University of Limerick.

## EXPERIENCE

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### QA Test Framework Developer

Sept 2024 – Present

*Sonatus – Dublin, Ireland*

- Developed code, tools, and infrastructure in Python for the automated test framework and related systems to support QA testing of the Sonatus vehicle software platform for SDVs

### GPU Compute Software Intern

May 2022 – Aug 2023

*Advanced Micro Devices, Inc. (AMD) – Calgary, Canada*

- 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 optimisations and reducing external library calls
- Prototyped compute kernels with Python and C++ to improve the 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, Canada
- 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 before the global product launch

### Design Engineering Summer Intern

May 2021 – Sept 2021

*Flexcim Manufacturing Services Inc. – Edmonton, Canada*

- Developed a Python program to retrieve Human-Machine Interface inputs and Programmable Logic Controller sensor data from plastic injection moulding machines and display data from MySQL on the HMI 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 optimising 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

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- **Languages:** Python, C/C++, C#, Java, JavaScript, MATLAB/Simulink, MIPS Assembly, PLC Ladder Logic, HTML/CSS, SQL, UML, LaTeX
- **Technologies:** TensorFlow, PyTorch, AWS, 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, Reinforcement Learning

## EDUCATION

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### **MSc in Artificial Intelligence and Machine Learning – First Class Honours** **Jan 2026**

*University of Limerick – Limerick, Ireland*

- **Modules:** Data Engineering and Machine Learning, Evolutionary Computation and Humanoid Robotics, Text Analytics and Natural Language Processing, Artificial Intelligence for Games, Machine Vision, Deep Reinforcement Learning, AI Ecosystems, Probabilistic and Explainable AI, Research Methods
- **Awards:** University of Limerick President's List (Spring 2024/2025, Autumn 2024/2025), University of Limerick Postgraduate Scholarship for International Students

### **BSc(Eng) in Software Engineering – With Distinction** **May 2024**

*Schulich School of Engineering, University of Calgary – Calgary, Canada*

- **Minor:** Mechatronics
- **Modules:** 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:** Schulich School of Engineering Dean's List (2021/2022), Schulich School of Engineering Dean's Entrance Scholarship, University of Calgary Entrance Scholarship, Alexander Rutherford Scholarship

### **Alberta High School Diploma** **Jun 2017**

*Leduc Composite High School – Leduc, Canada*

#### **Certifications**

- Machine Learning Foundations – *Amazon Web Services (AWS Academy, 2025)*
- Cloud Foundations – *Amazon Web Services (AWS Academy, 2025)*
- Machine Learning – *DeepLearning.AI, Stanford University (Coursera, 2023)*
- C# Programming for Unity Game Development – *University of Colorado System (Coursera, 2023)*

## PROJECTS

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### **Dissertation Project – BDS Research Group, Lero** **Nov 2024 – Sept 2025**

- Independently researched the application of Grammatical Evolution in evolving machine learning models directly as GPU programs for the image segmentation of retinal blood vessels, with a focus on the evolution of CUDA kernels in C
- Developed a Python toolchain for the automatic generation of data-parallel GPU programs in CUDA C, which demonstrated significant speedups over CPU on large training sets with 100,000 samples or more

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

- Teamed up with three fellow students to design a system that recognises 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

## EXTRACURRICULAR

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### **Speed Skating Coach** **Sept 2023 – Mar 2024**

- Instructed beginner and introductory speed skaters aged 10 and under in short and long track speed skating with Calgary Speed Skating Association

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

- Represented Singapore in the Women's 1,500 metres Short Track Speed Skating event at the PyeongChang 2018 Olympic Winter Games
- Trained 30-40 hours per week for three years with the Olympic Oval Elite Athlete Pathway Programme as a full-time student