Lucian Cheng

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Education

McMaster University
Sep 2021 - Apr 2026

Bachelor of Engineering - Mechatronics Engineering and Biomedical Engineering Co-op
Hamilton, ON

- **Awards**: Provost Honour Roll x 2 - Top 1% of Engineering Cohort - **GPA: 4.0**
- **Courses**: Data Structures & Algorithms, Software Architecture, Embedded Systems, System Design, Operating Systems

Professional Experience

Bluewrist Inc.
May 2024 - Present

Software Engineer Intern
Markham, ON

- Implemented 2D ML Anomaly Detection models with a accuracy of **98%** using **PyTorch**
- Led the development of a full-stack ML application in a team of 5 by designing software architecture UML diagrams from stakeholders, testing, and large-scale deployment using **Visual Basic**, **Python**, and Agile principle
- Built a **Python** and .NET CLR server interface for communication between 3 main software family products to a scalable machine learning backend using TCP/IP communication protocol
- Created a image tiling algorithm for computer vision image defect training which reduced memory consumption **95%** by using **CUDA** and **OpenCV**
- Developed a back-end REST API for HTTP requests and server architecture using **Flask** and **Python** to allow for cloud-based ML operations across 3 software products and supporting 3 models

McMaster EcoCAR
Oct 2022 - Present

CAVs Software Team (Connected Automated Vehicles)
Hamilton, ON

- Integrated vehicle self-driving **SAE level 2 autonomy** in a team of **35** members using sensors, computer vision, and trajectory planning into a production 2024 Cadillac LYRIQ
- Generated algorithms for lead vehicle identification in **Python** for the CACC feature of ADAS, testing >**100** concurrent generated vehicles along with visualization of simulation and verification of code using Pytest
- Coordinated Software-in-the-Loop (SIL) testing for the custom simulation driving environment

McMaster University
Sep 2023 - Dec 2023

Computational Mechanics Teaching Assistant
Hamilton, ON

- Mentored **8-9** students bi-weekly on challenging statics concepts, elevating their grades to >**90%** through lab tests
- Led office hours and employed communication skills to teach **1-2** students weekly through problems and concepts

Bluewrist Inc.
May 2023 - Aug 2023

Software Engineer Intern
Markham, ON

- Implemented the PointNet++ **Machine Learning Artificial Intelligence model** in PyTorch for part segmentation of computer vision from 3D point cloud data, resulting in a **4-week** time reduction across **10 people**
- Optimized runtime by **86.4% (38.1s)** per **250k** points by producing a **C++** inference program with LibTorch & CMake using CUDA and CPU memory, leading to an accuracy of >**98%**
- Created a full-stack internal tool using **.NET** to facilitate in-house training and testing, handling >**600** samples

Projects

Jaylolfadez.com - Startup | *In Development / Testing*

- Created a full-stack social media/scheduling web application platform leading to **$300** in profit by using **ReactJS**, **NodeJS**, **ExpressJS**, **TailwindCSS**, and **MongoDB**
- Developed a RESTful API to handle requests of **30 monthly users**, using Google OAuth authentication tokens, Google Calendar API, and Meta Instagram Graph API, saving user data with JWT authentication and cookies
- Followed the software development lifecycle, including testing/validation, maintenance, requirements, design, and architecture of the application and deployment using with **AWS EC2**, **AWS S3**, and **NGINX**

Technical Skills

Programming: Python, C, C++, HTML, CSS, JavaScript, Visual Basic, Swift, SQL, Java, Lua

Technologies: PyTorch, ReactJS, NodeJS, ExpressJS, MongoDB, TailwindCSS, .NET, CUDA, OpenCV, Flask

Tools and Platforms: Git, GitHub, SVN, Linux, JIRA, AWS (EC2, S3), GCP, RESTful API, Unix, OOP