# Lucian Cheng

Richmond Hill, ON | 647-919-8636 | *luciancheng3@gmail.com* | *linkedin.com/in/luciancheng* | *github.com/luciancheng* | *luciancheng.com*

## Education

**McMaster University** **Sep 2021 - May 2026**

*Bachelors of Computer Engineering and Biomedical Engineering Co-op* *Hamilton, ON*

- **Academics**: **GPA: 4.0/4.0**, Provost Honour Roll 2022, 2023, Top 1% of Engineering Cohort
- **Courses**: Data Structures & Algorithms, Software Development, Mathematics, Statistics, Computer Architecture, Operating Systems, Computer Systems Software, Physics, Electrical Systems, Embedded Systems

## Professional Experience

**McMaster EcoCAR** **Oct 2022 - Present**

*CAVs Software Engineer* *Hamilton, ON*

- Collaborated across **5** cross-functional teams to rapidly integrate high-impact production-ready code for **SAE Level 2** vehicle autonomy into a vehicle system by ramping on the assigned codebase and systems within tight deadlines
- Developed new algorithms for lead vehicle identification in **Python**, successfully handling data from **100+** concurrent simulated vehicles, leading to a **15%** increase in vehicle detection accuracy

**Bluewrist Inc.** **May 2024 - Aug 2024**

*Software Engineer Intern* *Markham, ON*

- Implemented 2D ML AI Anomaly Detection deep learning models with an accuracy of **98%** using **PyTorch**, leading to the deployment of high quality products and features at scale
- Engineered and led the development of a large-scale full-stack ML application in a team of **5** with minimal guidance and funding by designing diagrams for multiple stakeholders using **VB**, **Python**, and Agile
- Optimized system performance by **95%** by creating an image-tiling algorithm for training using **CUDA**, **OpenCV**, and multi-process parallel threads, leading to optimized performance, latency, and loss
- Developed a server-oriented architecture backend REST API for HTTP requests using **Flask** and **Python** for cloud deployment of ML models, ensuring efficiency, scalability, and stability based on customer needs

**McMaster University** **Sep 2023 - Dec 2023**

*Physics and Circuits Teaching Assistant* *Hamilton, ON*

- Mentored **8-9** students bi-weekly on challenging statics concepts, elevating their grades to >**90%** through lab tests for topics such as computational mechanics, analog circuits, and digital logic

**Bluewrist Inc.** **May 2023 - Aug 2023**

*Software Engineer Intern* *Markham, ON*

- Implemented the PointNet++ CNN **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 using a **C++** inference program with LibTorch & CMake, enabling faster real-time processing and reducing downtime in production systems and internal tools

## Projects

**Jaylolfadez - Startup** | *Link*

- Created a full-stack social media web application leading to **$600** in profit by using **React** and **TailwindCSS** frontend and a **Node.JS**, **ExpressJS**, **MongoDB**, and **AWS** backend
- Developed a scalable-system RESTful API for high-volume requests handling **150 monthly users**, using Google OAuth, Google Calendar API and Meta Instagram Graph API with **AWS** for cloud deployment

**Embedded Systems Design Project** | *Link*

- Integrate multiplexing of **16** actuators using **SPI** with an external shift register and RTOS, leveraging mutexes, semaphores, and multi-threading for optimized and efficient software for low-level memory/resource management
- Drafted high-level firmware, and system software architecture for full life cycle firmware development to integration and tests of embedded development in **C++** and **C** on embedded platforms for multi-disciplinary systems

## Technical Skills

**Programming:** Python, C, C++, HTML, CSS, JavaScript, TypeScript, Embedded C++, Java, C#, SQL, Swift

**Technologies:** PyTorch, React, Node, Express, MongoDB, .NET, CUDA, Spring Boot, Flask, OpenCV, NumPy, Pandas

**Tools and Platforms:** Git, Github, JIRA, Linux, AWS (EC2, S3), GCP, Rest API, PostgreSQL, MySQL