

JAYDEN CHAN

📞 647-616-5987

✉ chanjayden31@gmail.com

🌐 [linkedin.com/in/Jayden-Chan](https://www.linkedin.com/in/Jayden-Chan)

🐙 github.com/JaydenChan2

Education

University of Waterloo

Bachelor of Computer Science | Double Degree Program, With Co-op

June 2030

Waterloo, Ontario

Wilfrid Laurier University

Bachelor of Business Administration | Double Degree Program, With Co-op

June 2030

Waterloo, Ontario

Technical Skills

Languages: Python, Java, TypeScript, JavaScript, SQL, C/C++, Bash, HTML/CSS

Frameworks: React, Next.js, Node.js, Express, FastAPI, Flask

Databases: PostgreSQL, Redis

Libraries: TensorFlow, OpenCV, MediaPipe, NumPy, Pandas, Librosa, Matplotlib

Tools & Platforms: Docker, Vercel, AWS, Git, Linux, FFmpeg, RESTful APIs

Concepts: RAG Pipelines, LLMs, Computer Vision, Digital Signal Processing (DSP), JWT Authentication, Agile Development

Experience

Autonomy Engineer

March 2026 – Present

Waterloo Aerial Robotics Group (WARG)

Waterloo, Ontario

- Designed a concurrent worker system spanning **3 parallel processes** using Python's multiprocessing library, reducing command execution latency by **40%** relative to the prior sequential implementation.
- Processed real-time drone telemetry at **~50 Hz** via MAVLink, driving a closed-loop control system that delivered altitude and yaw corrections within **200ms** per command cycle.
- Implemented a **30fps** object detection system in **OpenCV** using HSV colorspace filtering, sustaining reliable target tracking across **5+ simulated lighting conditions** in outdoor field tests.

Artificial Intelligence Instructor

September 2024 – June 2025

Dufferin-Peel Catholic District School Board

Brampton, Ontario

- Designed and delivered a year-long deep learning curriculum in which students built and trained **CNNs** and **RNNs** from scratch using **TensorFlow** and **Keras** across weekly structured sessions.
- Developed live computer vision demonstrations in **OpenCV** and **MediaPipe** covering real-time feature extraction and object detection, serving as the primary instructional tool across all workshop sessions.
- Guided **10+ students** through the full deployment cycle of AI models as web APIs, taking projects from local Python prototypes to functional, shareable applications with documented endpoints.

Software Developer Intern

July 2024 – October 2024

FuturIQ Inc.

Brampton, Ontario

- Built an interactive **3D digital human** in **Unity** using MetaHuman Creator and integrated it into a web application via API, contributing to a **25%** increase in average session duration.
- Engineered a Python chatbot backend for automated content recommendations, eliminating approximately **3 hours** of manual content review work per week across the internal team.
- Shipped an **HTML/CSS/JS** interface with integrated chatbot support, reducing onboarding time for non-technical users by **50%**.

Projects

Lynx 🐙

- Architected a full-stack application in **React** and **FastAPI** connecting document upload to investor matching via a REST API, achieving **85% mandate-alignment accuracy** across **40+ investor profiles**.
- Built a **RAG**-powered ingestion system that parsed **50+ pages** of dense technical IP documentation into a structured knowledge graph, reducing manual analysis time from several hours to **under 2 minutes**.
- Optimized async request handling to sustain **sub-800ms** response times, integrating **Google Gemini** for AI persona generation and **ElevenLabs** for real-time synthetic voice output.

Music Sheet Converter 🎵

- Developed a multi-format audio processing tool (MP3, WAV, MP4) that generates synchronized MIDI and PDF sheet music, reducing a **20–30 minute** manual transcription process to **under 5 minutes**.
- Improved pitch detection accuracy by **30%** over the Librosa baseline through custom DSP algorithms that isolate fundamental frequencies and rhythmic intervals across **10+ instrument types**.
- Added a playback overlay syncing visual tutorial cues with audio timestamps to improve notation accuracy across complex, multi-track arrangements.

AI Facial Geometry Analysis 🤖

- Engineered a real-time face tracking application in **Python** processing **468 facial landmarks** per frame via **MediaPipe** and **OpenCV**, sustaining **sub-50ms** per-frame latency at **24fps**.
- Developed a **NumPy** geometry engine computing **5 facial proportion metrics** via vector calculus, symmetry deviation, canthal tilt, golden ratio alignment, facial thirds ratio, and jaw angle.
- Automated proportion scoring across the frontal, sagittal, and transverse planes, providing users with objective, reproducible measurements in place of subjective visual assessment.