

ARIO BARIN OSTOVARY

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EDUCATION

University of Waterloo

Honours Bachelor of Software Engineering, Co-op

Waterloo, Ontario

Cumulative Average: 92.8%

TECHNICAL SKILLS

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

Backend: FastAPI, REST APIs, WebSocket, MongoDB, Supabase, Asyncio, Pydantic, Playwright, OpenAI API, Gemini

Frontend: React, Next.js, React Native (Expo)

ML & Data: PyTorch, XGBoost, scikit-learn, pandas, NumPy, OpenCV, LangGraph

Cloud & DevOps: Docker, GitHub Actions, DigitalOcean, Linux, Git

PROJECTS

eValuator (Auction Sniper) | [Website](#) | [Portfolio](#)

- Built a real-time **ML auction sniping bot** for a live game economy, achieving **top 0.01% daily income**; deployed a persistent **DigitalOcean** pipeline ingesting **12M+** auction records from live APIs
- Trained an **XGBoost** classifier on labeled samples reaching **98.4%+ precision**, filtering 100K+ live listings to 10-20 actionable picks per poll; optimized inference for **114x speedup** via vectorization
- Built full-stack with async **FastAPI** backend, **WebSocket** broadcasting, and **React** dashboard for real-time visualization; backtested strategy **captured 87%** of verifiable arbitrage opportunities over 2 weeks

Project Reality | [Portfolio](#) | [Devpost](#)

- Best Overall (MasseyHacks XI):** Mixed-reality game system on Raspberry Pi 5 using stereoscopic cameras for **real-time 3D depth estimation**; tracked objects at **15 m/s at 60 FPS** via multithreaded processing
- Integrated with Unity over **TCP** using sequence IDs to preserve packet order; cut calibration time from 60 min to **5 min** with an adaptive live-slider GUI

ReelJobs | [Portfolio](#) | [Devpost](#)

- DeltaHacks 3rd Overall:** job discovery platform turning job listings to short-form content; containerized and deployed with **Docker + GitHub Actions CI/CD**
- Implemented semantic job search using **Gemini (768-dim embeddings)** and **MongoDB Atlas Vector Search**; added on-demand video generation from job descriptions, keeping videos relevant
- Developed in **React Native (Expo)** with **HLS** streaming, CDN-backed playback URLs; engineered a **Gemini + Playwright** Greenhouse auto-apply agent for form analysis/autofill with **95% success rate**

EXPERIENCE

Research Assistant, AI Robotics Center | [Press Release](#) | [Portfolio](#)

June 2024 – Jan. 2025

University of Windsor

Windsor, ON

- Automated commercial greenhouse tomato flower pollination, replacing bees with a **6-DOF robotic arm**
- Trained **YOLOv8** and Faster R-CNN on 3k+ images; deployed on **Jetson Orin Nano** via **Intel RealSense** depth camera, achieving **0.75 mAP@50** under **120ms** end-to-end
- Achieved **±5mm** end-effector precision via **SE(3)** hand-eye calibration between camera and arm

Reinforcement Learning Engineer, Driverless Racing | [Portfolio](#)

Sep. 2025 – Present

WAT.ai - Design Team

Waterloo, ON

- Drove simulation design and model training for a 10-person racing team; trained **PPO** and **SAC** across **17 custom tracks** with domain randomization for multi-task generalization; presenting at **CUCAI**
- Designed CNN occupancy grid observation space, **outperforming lidar lap times by 13-40%** across 50+ experiments; deployed camera-to-grid pipeline on **Raspberry Pi** at **7.1ms/frame**

Quantitative ML Engineer | [Portfolio](#)

Dec. 2025 – Present

Wat Street - Design Team

Waterloo, ON

- Segmented **20+ years** of cross-asset data (SPY, VIX, TLT) into **6 regime states** via **Gaussian HMM + K-Means**; reconciled **81% model agreement** via pessimist-pivot consensus labeling
- Trained **TCN** on labeled regimes for forecasting; Optuna tuning improved **macro-F1 by 22%**, reaching **74% test accuracy**