JESSICA CHEN

780-263-8781 | jesschen.cjj@gmail.com | linkedin.com/in/jessicachen-cjj/ | github.com/swannercjj | swannercjj.github.io

EDUCATION

University of Toronto — cGPA 3.91/4.00 Toronto, ON

Bachelor of Science in Computer Science, Statistical Science, Mathematics *Expected Graduation May 2026*

Scholarships: NSERC Undergraduate Student Research Award, New College In-Course Scholarship, Dean's List Scholar

TECHNICAL SKILLS

Languages: Python, C/C#/C++, JavaScript, TypeScript, Java, SQL, Q, GDScript
Frameworks/Libraries: React, PyTorch, Jax, TensorFlow, Scikit-learn, Gymnasium, , ML-Agents (Unity)
Developer Tools: Git, Unity, Microsoft Azure, Figma, Godot, WandB, Supabase, Firebase, Django

EXPERIENCE

Quantitative Trading Analyst / AI Engineer August 2024 – August 2025

RBC Capital Markets *Toronto, Canada*

- Re-architected 8+ predictive signal models into a large-scale **PyTorch** model for short-term volume predictions
- Extended coverage for ML data pipelines to include 5+ years of trading data from South America and Europe stock exchanges to power **AI-driven trading algorithms**
- Built and deployed a low-latency trading algorithm with a weighted signal optimization model, enhancing execution for **150+ automated strategies**

Undergraduate Research Assistant — Supervisor: Dr. Michael Bowling

University of Alberta, Department of Computing Science *Edmonton, Canada*

Resource Constrained RL *May 2024 – August 2024*

- **Co-authored paper** in review at **ICLR 2026**, Toward Agents That Reason About Their Computation, introducing solutions for resource and compute constrained **reinforcement learning**
- Implemented an action-repeat mechanism into **deep Q-Network DQN**, allowing agents to **reduce decision frequency by 75%**, lowering computational cost while maintaining training stability and reward performance

Dreaming to be Deterministic *May 2023 – August 2023*

- Re-implemented **model-based reinforcement learning** algorithm DreamerV3 and integrated deterministic randomness for reproducible experiment results

PROJECTS

Fitting In | *Unity, C#* (On-going)

- **Multiplayer game** where players work together piloting a human-like spaceship and making the ship perform tasks
- Developed spaceship arm **input and movement system** and framework for interaction with outside objects

AI Audio Editor (Hack the North 2025) | *SQL, TypeScript*

- Developed **agentic digital audio workstation** to directly edit audio files and tracks through LLM prompts
- Utilized **Microsoft Azure Cloud** to host and deploy **Azure SQL database** for audio files, users, and projects

Paper Plate Paranoia (utGDDC Fall Jam 2024 2nd Place) | *Unity, C#*

- Bullet hell game where player must collect items while dodging enemies with different attack patterns
- Designed **dynamic enemy attack patterns**, including tracking enemies and telegraphed laser systems

EXTRACURRICULAR

University of Toronto Machine Intelligence Student Team

Vice President Academics *May 2025 – present*

- Defined department strategy, delivering ML workshops and programs for audiences of **400+ attendees**
- Co-chair of **AI Squared reinforcement learning tournament**, fostering a competitive yet inclusive environment with guest lectures and networking events, industry partners with such as **AMD Schola** and **Artificial Agency**

Software Developer *September 2025 – present*

- Developed event and course pages using **Next.js** and **TypeScript**, improving usability for **300+ users**