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 <div align="right">Toronto, ON</div>

Bachelor of Science in Computer Science, Statistical Science, Mathematics <div align="right">*Expected Graduation May 2026*</div>

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

EXPERIENCE

Quantitative Trading Analyst / AI Engineer <div align="right">August 2024 – August 2025</div>

RBC Capital Markets <div align="right">*Toronto, Canada*</div>

- 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 <div align="right">May 2024 – August 2024</div>

University of Alberta, Department of Computing Science <div align="right">*Edmonton, Canada*</div>

- **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

EXTRACURRICULAR

University of Toronto Machine Intelligence Student Team

Vice President Academics <div align="right">*May 2025 – present*</div>

- 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 <div align="right">*September 2025 – present*</div>

- Developed event and course pages using **Next.js** and **TypeScript**, improving usability for **300+ users**
- Worked with **Figma** prototypes to guide front-end development of responsive features

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

Heart-Beatz | *Arduino, Python, JavaScript, CSS*

- Built hardware and software heart beat tracker that personalizes workout music based on heart rate
- Implemented an **Arduino-based circuitry** to measure users' heart rate, uploading data to a **MySQL database**
- Built a **React-based web application** integrating hardware to display visualizations of the user's exercise data

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