Jiajing (Jessica) Chen

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Education

University of Toronto — cGPA 3.91/4.00 Toronto, ON

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

Relevant coursework: neural networks & deep learning, reinforcement learning, artificial intelligence, nonlinear optimization, computer graphics, physics-based animation, game design, computers & games, computer vision

Scholarships: NSERC Undergraduate Student Research Award (2024)

Technical Skills

Languages: Python, C++, C#, C, Java, Q, SQL, GDScript, Assembly
Developer Tools: Git, Gymnasium, WandB, Firebase, Django, React, Unity, Godot
Machine Learning Frameworks: PyTorch, Jax, TensorFlow, Scikit-learn, ML-Agents (Unity)

Experience

Quantitative Trading Analyst August 2024 – present

RBC Capital Markets *Toronto, ON*

- Optimized volume prediction models, boosting fill-rate accuracy and reducing slippage in AI-driven trading
- Developed and backtested multi-signal trading algorithms, projecting ∼2 bid–ask spreads in daily returns

Undergraduate Research Assistant — Supervisor: Dr. Michael Bowling

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

Resource Constrained RL *May 2024 – August 2024*

- Trained Deep Q-Networks (DQN) on Atari 2600 to evaluate agent performance under computational constraints
- Implemented an action-repeat mechanism that allowed agents to skip frames and reduce decision frequency by 75%, lowering computational cost while maintaining baseline reward performance and training stability

Projects

Disbanded | *Unity, C#, Blender* January 2025

- Collaborated with a team of 4 to develop *Disbanded*, a rhythm-based FPS integrating gameplay with music
- Developed weapon concepts, 3D environment assets, and shooting animations that support core gameplay mechanics and rhythm synchronization
- Composed original soundtracks synchronized with player actions, enhancing rhythm-driven engagement

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

- Collaborated with a team of 4 to develop an engaging bullet hell game emphasizing fast-paced gameplay
- Designed dynamic enemy attack patterns, including tracking enemies and telegraphed laser systems
- Crafted animation state transitions and event-driven visual feedback to enhance player experience and clarity during high-intensity gameplay

Predicting RNA Reactivity | *Python, PyTorch* March 2024

- Designed and evaluated machine learning architectures, including Hyena, convolutional neural networks (CNNs), hybrid CNN-Transformer models, to predict RNA chemical reactivity dataset containing 1M+ RNA sequences
- Achieved MAE of 0.1540 vs. baseline 0.1731, ranking in the top 50 of the Stanford RNA Folding Competition

Activities and Volunteer

UofT Machine Intelligence Student Team

Vice President Academics *May 2025 – present*

- Define vision and strategic priorities for the Academics department, addressing key gaps in ML education
- Co-chair *AI Squared*, UofT's largest reinforcement learning tournament, fostering a competitive yet inclusive environment with guest lectures and networking events
- Lead planning and execution of large-scale workshops and educational programs for audiences of 400+ attendees

Academic Director *August 2024 – April 2025*

- Delivered technical machine learning workshops to audiences of 150+, with recorded session viewcount of 100+
- Established and maintained partnerships with researchers and academic institutions to enrich content and outreach
- Managed on-site operations for GenAI Genesis 2025, Canada's largest AI hackathon, supporting 600+ participants