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, computers & games, computer graphics, 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*

- Conduct quantitative research and implement machine learning trading strategies for stock market applications
- Develop and optimize models to combine multiple trading strategies, with projected daily performance of 2 spreads

Undergraduate Research Assistant — Supervisor: Dr. Michael Bowling

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

Resource Constrained RL *May 2024 – August 2024*

- Trained DQN on Atari 2600 games to examine how reinforcement learning agents manage computational cost
- Implemented action repeats algorithm, allowing agents to selectively repeat actions, with agent achieving equivalent performance while skipping frames and making less decisions

Projects

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

- Worked with a team of 4 to develop *Disbanded*, a rhythm-based first person shooter game using Unity
- Created concept art for weapons, 3D models for environment assets, and shooting animations in Blender
- Composed and produced original soundtracks, integrating with gameplay to enhance the rhythm experience

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 that emphasizes fast-paced gameplay
- Designed dynamic enemy attack patterns, including tracking enemies and a laser with a visual warning system
- Managed animation states in Unity's Animator, using event scripting for smooth transitions and visual feedback

Predicting RNA Reactivity | *Python, PyTorch* March 2024

- Designed and evaluated machine learning models, including Hyena, CNN, and multi-layer CNN-Transformer, to predict RNA chemical reactivity using a dataset with over 1 million RNA sequences
- Combined multilayer CNN with transformers to capture short and long-range dependencies of RNA sequences
- Achieved a MAE of 0.1540, outperforming baseline of 0.1731, scoring top 50 in Stanford RNA Folding Competition

Activities and Volunteer

UofT Machine Intelligence Student Team

Vice President Academics *May 2025 – present*

- Plan the vision and priorities for the Academics department focusing on addressing gaps in UofT's AI/ML education
- Co-chair of AI Squared, UofT's largest reinforcement learning tournament focused on creating a competitive and welcoming learning environment with guest speakers and networking opportunities
- Oversee organization and delivery of large-scale events, including workshops and educational programs

Academic Director *August 2024 – April 2025*

- Delivered engaging technical workshops in machine learning for audiences of 150+, each video having 100+ views
- Cultivated and maintained partnerships with researchers and representatives from external academic institutions
- Oversaw on-site operations for GenAI Genesis 2025, Canada's largest AI hackathon with 600+ participants