Aryan Nehete

aryann.xyz (647) 677-6905 nehetearyan@gmail.com /in/aryan-nehete

EDUCATION

University of Toronto Expected April 2027

BASc in Engineering Science — Engineering Math, Stats, Finance Major & AI Minor *Toronto, Canada*

- Dean's Honours List Scholar, **cGPA:** 3.61
- **Relevant Coursework:** Engineering Finance & Economics, Financial Principles II, Financial Optimization Models, Economic Analysis & Decision Making, Financial Engineering, Mathematical Programming, Fundamentals of Deep Learning, Praxis (Engineering Design)

EXPERIENCE

Teaching Assistant Sept. 2025 – Present

University of Toronto *Toronto, Canada*

- Lead programming lab practicals for **ESC180: Introduction to Computer Programming** for first year Engineering Science students.
- Guide students in learning Python fundamentals, including variables, control flow, functions, and problem-solving strategies.
- Help students analyze and compare the efficiency of algorithms, developing intuition for designing more effective computational solutions.

Founder & Tutor May – Aug. 2023, 2024, 2025

Freelance Tutoring Business *GTA, Canada*

- Improved academic performance in **50+ students**, measured by 10%+ increases in test scores, by delivering tailored lessons in calculus, linear algebra, and computer science.
- Launched a **referral-based outreach system** that organically scaled client acquisition, strengthened brand trust, and doubled tutoring engagement within target student networks.
- Strengthened conceptual understanding, and improved independent problem-solving ability, by creating interactive lessons and personalized problem sets.

PROJECTS

Handwriting to LaTeX [Report] May - Aug. 2025

- Engineered a **CNN (ResNet-18) encoder + LSTM/Transformer decoders** for Handwritten Mathematical Expression Recognition (HMER), converting rasterized InkML strokes into LaTeX strings.
- Optimized training with PyTorch, label smoothing, teacher forcing, AdamW, and beam search (k=3–5), achieving BLEU $\approx$ 0.71 on CROHME test data for long/nested expressions.
- Performed robustness and interpretability analysis using cross-attention visualizations, entropy diagnostics, and OOD stress tests to identify syntax brittleness and guide augmentation-matched fine-tuning.

Seamcarving March 2024

- Programmed a seam carving algorithm in C to perform **content-aware image resizing** by identifying and removing low-energy pixel seams.
- Can decrease image dimensions while preserving key visual features, such as aspect ratio and important objects, minimizing distortion.

Pong December 2023

- Created a pong engine using **NumPy**, leveraging predictive trajectory modeling to forecast ball positions 50 bounces ahead.
- Implemented opponent strategy analysis to target vulnerable corner zones, optimizing shot accuracy and increasing scoring opportunities.
- Ranked **2nd** out of 300 Engineering Science students in a tournament, with a **95% winrate**.

TECHNICAL SKILLS

Programming: Python, C++, C, R, MATLAB, Java, HTML/CSS, System Verilog, and Assembly
Frameworks and Libraries: PyTorch, NumPy, Pandas, MatPlotLib, Flask, BeautifulSoup, Seaborn, and PyGame
Other: Advanced MS Excel, Financial Modeling & Optimization, Git, Visual Studio Code, PowerPoint, Overleaf, Fusion360