MIKHAIL SKAZHENYUK

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EDUCATION

HBSc in Computer Science Graduating 05/26

University of Toronto - St. George Campus, Toronto, ON, CA **3.59**/4.0 cGPA

Programs: Computer Science Focus in Artificial Intelligence (Specialist), Cognitive Science (Major), Statistics (Minor)

Coursework: **Data Structures** and Analysis, **Algorithm Design**, Analysis & Complexity, **Machine Learning**, **Artificial Intelligence**, Probabilistic Learning and Reasoning, Computer Vision, Natural Language Processing, Neural Networks and Deep Learning.

EXPERIENCE

University of Toronto, Toronto, ON: Researcher Sep 2024 - Present

- Simulated how affective state affects memory retention curves with a Cognitive Architecture model in Python.
- Performed Linear Regression on Simulated participants' affective states, showing a strong correlation between memory retention and emotion.
- Supervised by Professor Can Mekik.

Delta Upsilon International Fraternity, Toronto, ON: Frontend Developer May 2025 - June 2025

- Commissioned for the front-end of a full-stack WEBSITE for a client using React, Tailwind CSS, and Node.js.
- Implemented a clean, mobile-friendly UI, ensuring accessibility across devices and meeting client specifications.
- Managed project lifecycle from requirements gathering to deployment, delivering a functional platform for communication for 100+ newsletter members.

TECHNICAL SKILLS

Languages: Python (Proficient), C (Advanced), Java (Advanced), C++ (Intermediate), HTML/CSS (Intermediate), MATLAB (Beginner) **Libraries:** PyTorch, TensorFlow, NumPy, Pandas, Keras, Matplotlib, Scikit-learn, React **Tools:** Bash, Git, Linux, SQL, LaTeX, MySQL, Tailwind CSS, node.js

PROJECTS

Predicting Stock Trends with Linear Regression and Sentiment

Developed a predictive model to forecast stock market trends using Machine Learning techniques, including SARIMA and transformer models, alongside sentiment analysis.

- Achieved a **77.5% directional accuracy** with a transformer model in predicting stock price movements, indicating effectiveness in capturing temporal dependencies and generalizing to new data.
- Simulated trading on unseen Tesla (TSLA) stock data, demonstrating a hypothetical **profit of $12** over 100 prediction steps, suggesting potential for net gain over time.
- Conducted sentiment analysis on financial news, achieving **80% accuracy** on article titles with Random Forests for binary and ternary classifications.

Sampling Visualizer

Developing an interactive GUI for visualizing various sampling methods used in probabilistic modelling and Bayesian inference. Designed to be intuitive, interactive, and informative. It is a valuable tool for understanding Monte Carlo methods, Markov Chain Monte Carlo, and their applications.

Personal Website

Built a responsive and interactive personal WEBSITE using React, Tailwind CSS, and node.js, coded in TypeScript, to showcase my portfolio.

Markov Chain Monte Carlo and Variational Autoencoder in the TrueSkill Model

Used Bayesian inference in medium-sized models with continuous latent variables to understand the basics of Langevin and Hamiltonian Monte Carlo.

CNN for real-time Facial Emotion Recognition

Used OpenCV's Haar cascade classifier to detect faces and a basic CNN trained on the FER2013 dataset to classify emotions in real-time from the webcam.