

# Kazi Takia Talha

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## EDUCATION

### University of Toronto Mississauga

2022 - 2026

Honors Bachelor of Science (H.Bsc.), Computer Science & Mathematics + (PEY Co-op)

**AWARDS & ACCOMPLISHMENTS** : Dean's Scholar Award, UofT International Scholar Award

## TECHNICAL SKILLS

- Programming: C++, C, Python, Java, RISC-V Assembly, HTML, CSS, JavaScript
- Frameworks & Others: JavaFX, Sklearn, PyTorch, Pandas, Numpy, Git, Github, GitLab, Notion, Tableau, Microsoft Office, Bash Scripting, React, Next, PostgreSQL, Linux, Flask, Docker, FastAPI

## EXPERIENCE

### Software Analyst Intern, Hitachi Rail

May 2025 - Present

- Contributing to the optimization of the Automatic Train Supervision (ATS) system to improve railway travel time and operational efficiency
- Performed data cleaning, analysis, and feature engineering on large-scale operational datasets extracted from XML files and internal databases
- Developed a baseline machine learning model to analyze and predict travel time
- Currently implementing a graph-based representation of train network data using Structural Deep Network Embedding (SDNE) to capture network structure as features for downstream machine learning models.

### Software Developer Intern, The Hospital for Sick Children

Jan 2025 - Apr 2025

- Worked in a team to build a website using Next.js and FastAPI for their researchers to analysis data features, track and monitor participant data
- Developed an algorithm to process daily sensor data from participants and automatically determine hours of wear

### ML Developer Intern, The Human Feedback Foundation (The Linux Foundation)

Jan 2025 - Apr 2025

- Developed a personal AI tutor that guides students and surfaces the next best module or topic they should learn to understand course material taught at UofT
- Built a Graph RAG model that will collaborate with LangChain to extract the best responses to a user query
- Fine-tuned a pre-trained large language model and created a full-stack chatbot application using Next.js for the frontend and Flask for the backend

### Teaching Assistant, University of Toronto

Sep 2024 - Present

- Holding weekly office hours and tutorials to help students understand complex topics
- Grading assignments, exams and ensuring timely feedback and accurate assessment

## PROJECTS

### NucleAlse

[View Project](#)

- Developed a baseline model to identify dataset issues and benchmark performance against ensemble models, achieving an accuracy of 73%
- Designed a hierarchical SVM combined with Naive Bayes in order to include the protein hierarchy while predicting protein functions

### Math-BERT-T5 Hybrid Model for Mathematical Reasoning

[View Project](#)

- Developed an encoder with 6 blocks, inspired by T5 architecture, to address challenges in mathematical reasoning tasks.
- Analyzed 10+ research papers about language models to convert mathematical word problems into tokens, aligning with the best practices in deep learning, and achieved a significant reduction in training complexity.

### Mission: Extreme - iGraphics Project

[View Project](#)

- Developed a game using OpenGL library in C and C++, integrating modern iGraphics engine techniques.