

Hakim Temacini

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EDUCATION

McMaster University

B.Sc. Math and Computer Science, Minor in Physics (3.95 cGPA)

Hamilton, Ontario

Sep. 2021 – May 2026

PSI Start Theoretical Physics Program

Perimeter Institute

Waterloo ON

May 2025 - August 2025

AWARDS

Putnam Math Top 500 Finalist

McMaster University

December 2022/2023/2024/2025

Hamilton ON

ICPC Regional Top 20 Competitor

McMaster Competitive Programming Team

October 2021 - November 2024

Hamilton, ON

WORK EXPERIENCE

NSERC USRA Research Assistant

McMaster University - Supervisor: Prof. Hari Kunduri

May 2025 - August 2025

Hamilton, ON

- Conducted **NSERC USRA** research on a differential-geometry problem involving stable causality, using rigorous mathematical analysis and computation to characterize when nonlinear systems satisfy global constraints

Software Developer Intern

Intel - Altera (C++, Python, Javascript)

May 2023 - August 2024

Toronto, ON

- Scaled **ML** infrastructure to support deployment and inference for **1,000+** models, improving mass-testing scalability and reliability by fixing and monitoring build issues with **Bash** and **PyTorch**
- Improved developer adoption and supportability for advanced **C++ SYCL** compiler features by coauthoring customer-facing documentation for fast global memory management in the **FPGA** compiler toolchain on new targets.
- Enabled next-generation **FPGA** workflows for custom Agilx 5 boards by adding compiler support in **C++ SYCL** and **LLVM** for advanced Avalon memory management, including new compiler flags.
- Increased frontend and automation test coverage from **15%** to **95%+** and strengthened **CI** reliability by building quality infrastructure with **TypeScript**, **CSS**, **Node.js**, **Jest**, **Python**, and **Bash**.

ADCS Simulation Specialist

McMaster Neudose Satellite Team (Matlab, C++)

September 2024 - Present

Hamilton ON

- Designed and validated a satellite attitude determination algorithm in **MATLAB** that estimates orientation from **100+** magnetometer measurements sampled every **10ms**, achieving within **5°** accuracy for a rotating satellite.
- Converted the validated algorithm from **MATLAB** to **C++** for onboard deployment, transforming a research prototype into mission-oriented spacecraft software.

PROJECTS

Symmetry-Invariant Diffusion Maps | NumPy/Numba, SciPy, Python

December 2025

- Developed an unsupervised machine learning pipeline in **Python** using **PyTorch** and **SciPy** to classify phase behavior in frustrated spin systems

Project Pythia: Planetary Kp-index Predictor | Tensorflow Python, NodeJS

October 2023

- Built a machine learning project to predict geomagnetic storm activity from DSCOVR satellite data using **Tensorflow** in **Python**, winning NASA Space Apps Hamilton and advancing as a **global nominee** as **1** out of **587** selected from over **3,000** submissions

TECHNICAL SKILLS

Languages: Java, Kotlin, Python, Matlab, C/C++, SQL, JavaScript, HTML/CSS, Haskell, React, Typescript, C#, R

Frameworks: PyTorch, OpenCV, React, ThreeJS, OpenGL, NumPy, Matplotlib, Angular, REST API, AWS, Azure

Developer Tools: Git, GNU/Linux, Unix, Docker, Kubernetes, AWS, GDB, SSH, Unix, Megatron, FSDP

RESEARCH PAPERS

- Lopez, Federico Elizondo, Hari K. Kunduri, and **Hakim Temacini**. "On the Chen-Teo family of stationary asymptotically locally Minkowskian black holes." arXiv preprint arXiv:2508.19415 (2025).