Vraj Prajapati

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EDUCATION

University of Toronto **May, 2027**
B.ASc (Bachelors of Applied Science) Engineering Science *Toronto, ON*
- Relevant courses: Digital and Computer Systems, Data Structures and Algorithms (100%), Intro to CS (99%)

EXPERIENCE

Tenstorrent [gh:vprajapati-tt] **May 2024 – Aug 2025**
ML Compiler Engineer - Intern *Austin, TX*
- **Prototyped** Human-in-Loop Compiler Overrides and Visualization Framework for **Model Performance.**
- **Researching** a novel **SpiNNaker**-like configuration on Tenstorrent **ASIC**s with **Spiking Kernels** and **MLIR**.
- Implemented **MLIR** C-API Python Bindings for 4 Tenstorrent dialects, **functionalized** C++/Python InterOp.
- Developing **DSL** for writing TT-Metal kernels in Python, leveraging **MLIR** and various Optimizer Techniques.

IEEE University of Toronto Student Branch **May 2023 – May 2024, May 2024 - Present**
Technical Director, ASIC Team Director *Toronto, ON*
- Hosting workshops with topics such as **eAI Quantization**, **Computer Vision**, Altium **PCB Design**, etc…
- **Directing** 10 passionate ECEs and organizing UToronto's **only undergrad** design team for **ASIC Design**
- **Designing, Laying Out, Verifying, Taping-Out and Validating** various Mixed-Signal IC designs.

University of Toronto Machine Intelligence Student Team (UTMIST) **September 2023 – May 2024**
Project Director *Toronto, ON*
- **Founded** and leading Spiking Neural Networks project, highlighting **novel & efficient** approaches to AI.
- Creating **neuromorphic computing** hardware with **memristors** for spiking algorithms & **CNN** inference.
- **Directing a team** of 8 talented HWE developers and SWE developers on project with a **SCRUM** workflow

University of Toronto Robotics Association (UTRA) **June 2023 – May 2024**
Executive Electrical Advisor *Toronto, ON*
- Designed a **milestone-based** workflow with five **robot design** teams to hold **design reviews** with faculty
- Advising teams with **robotics design** decisions related to **odometry**, **mobile CV**, **localization**, **PID control**

University of Toronto Engineering Orientation (F!Rosh) Tech Team **June 2023 – August 2023**
Full Stack Web Developer *Remote*
- Used **MERN stack** to develop features for orientation.skule.ca such as **on-the-fly PDF generation**

University of Toronto Formula SAE **February 2023 – May 2023**
Driverless Team - Embedded Engineer *Toronto, ON*
- Worked with **SocketCAN** and **ROS2** to create features and code to drive FSAE Car in **driverless** competition

PROJECTS

Magnetic Accelerator **MakeUofT 2023 - Best Use of Qualcomm 8450HDK**
- Created a magnetic coil gun by applying fundamental **electromagnetics** with a team, and I leveraged the **DSP and eAI platform** of the Snapdragon 8450 to **efficiently detect** lifeless objects for the **targeting system**.

SKILLS

Programming in C, C++, Python, Java, SystemVerilog
Collaborative Leadership, Mentorship, Teaching
Engineering AI, Robotics, LLVM, MLIR, Web

CERTIFICATES & COURSES

Imperial College London - Mathematics for ML
Stanford - CS229: Machine Learning

ACHIEVEMENTS

Stellantis Student Awards Scholarship 2023
NASA Space Apps - Global Finalist Honorable Mention

INTERESTS

Making funny robots, Cooking, Going to the gym, Table Tennis, Bass Guitar, Punny Puns, Cheddar Broccoli Soup