

RISHI SHAH

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Education

McMaster University

Engineering — Schulich Leader Scholar

Apr. 2029

Hamilton, Ontario

Experience

Western University

Machine Learning Researcher

Apr. 2024 – Present

London, ON

- Redesigned CORNet-S, a lightweight brain-inspired vision model, to resist adversarial attacks while maintaining clean accuracy and weight
- Engineered novel robust blocks that improved adversarial accuracy by 9%
- Benchmarked against ResNet-18 and AlexNet under PGD, CW, and patch attacks on MNIST, CIFAR-100, ImageNet100 datasets

Hack49 Global

Co-founder

Jun. 2024 – Present

Remote

- Built a global programming community of 950+ students across 40+ countries
- Secured \$19,000+ in sponsorships by leading outreach, partnerships, and logistics

3D Forge

Founder

May 2024 – Sep. 2024

London, ON

- Created a 3D modelling business specializing in custom Croc accessories
- Acquired 100+ customers and generated over \$3500+ in revenue
- Awarded Ontario's Summer Company Grant for student entrepreneurship

Robarts Research Institute

Student Researcher

Nov. 2022 – May 2024

London, ON

- Developed U-Net segmentation models for DICOM medical images
- Created manual segmentations to support AI training pipelines for surgical imaging
- Built AR visualization apps using Unity and Vuforia for real-time mobile medical applications

Projects

DermAI - AI Powered Skin Disease Diagnosis | Python, Supabase

Mar. 2025

- Developed AI-based skin disease detection system using DenseNet121 trained on 19,500+ DermNet images
- Achieved 72% top-1 and 94% top-5 accuracy across 23 skin conditions
- Integrated chatbot interface for triage assessment

Gesture Controlled Robotic Arm | C++, Arduino, Python

Aug. 2024

- Developed a 3D-printed robotic arm with 5 SG90 servo motors that mimicked real-time hand gestures
- Used OpenCV to track finger movement and translated binary signals to Arduino control logic

From Pixels to Precision | Python, MatLab — National Bronze; Divisional Gold; Sanofi BioGenius Award

May 2023

- Partnered with Synaptive Medical Inc. to develop a deep-learning model to track surgical tool movements in minimally invasive surgeries
- Trained on 300 manually segmented surgical images with 95% DICE accuracy
- Analyzed performance across 4 illumination and tool scenarios with sub-0.12s inference speed per image

Technical Skills

Languages: Java, Python, C#, C++

Frameworks: PyTorch, Keras, OpenCV, Pandas

Tools: Arduino, Unity, Git/GitHub, MS Office, Raspberry Pi, VsCode, Notion

3D Modeling: SketchUp, Blender, Ultimaker CURA, Fusion 360

Leadership & Extracurricular Activities

Junior Achievement Company Program

Nov. 2021 – Apr. 2024

VP of HR/VP of Finance/President

London, ON

- Oversaw bookkeeping and financials as VP of HR and VP of Finance
- Led company as President, winning Best Sales Video Award and earning over \$1000 revenue

DECA Chapter Lead

Sep. 2023 – Apr. 2024

President

London, ON

- Designed executive team structure, mentored 80+ students across 30 training sessions, led mock competitions
- Increased DECA provincial qualifiers by 52%, international qualifiers by 50%, expanded the chapter by 55%