Rishi Shah

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Education

McMaster University **Apr. 2029**
Engineering — Schulich Leader Scholar (1 of 50 in Canada to win $120K national STEM scholarship) *Hamilton, Ontario*

Experience

Western University **Apr. 2024 – Aug. 2025**
Machine Learning Researcher *London, ON*
- Developed a novel CORNet-S variant, a brain-inspired vision model, achieving 97.82% robustness against adversarial attacks while maintaining clean accuracy and lightweight architecture
- Designed denoising and gated recurrent blocks, improving adversarial accuracy by 10%
- Benchmarked model robustness against ResNet-18 and AlexNet under PGD, CW, and patch attacks across MNIST, CIFAR-100, and ImageNet100 datasets

Hack49 Global **Jun. 2024 – Jun. 2025**
Co-founder *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 **May 2024 – Sep. 2024**
Founder *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 **Nov. 2022 – May 2024**
Student Researcher *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%