

# Darshan Shah

[darshanvshah.com](http://darshanvshah.com) | [shahd82@mcmaster.ca](mailto:shahd82@mcmaster.ca) | [linkedin.com/in/darshan-shah2](https://linkedin.com/in/darshan-shah2) | [github.com/DarshanVShah](https://github.com/DarshanVShah)

## EDUCATION

### McMaster University

*B.Eng. Software Engineering | Schulich Leader Scholarship Recipient*

Hamilton, ON

Sep 2024 – Expected Apr 2028

## EXPERIENCE

### Software Engineering Intern

May 2026 – Aug 2026

*Chatforce*

*Toronto, ON*

- Designed and shipped a GLSL post-processing framework with 10 real-time effects (tone mapping, color quantization, CRT, vertex snapping) and mobile-aware quality tiers that held a stable 30 fps on mid-range phones.
- Built a 3D asset pipeline that processed 3,000+ AI-generated models through automated quality grading, mesh optimization, and character auto-rigging, fully eliminating manual asset prep.
- Added semantic search over the asset library, letting 10,000+ users find reusable models by description.

### Graphics Programmer (Part-time)

Apr 2025 – Sep 2025

*Perch.gg, Venture for Canada*

*Hamilton, ON*

- Built a real-time ray tracing pipeline in Rust and Vulkan for a Bevy-based engine, owning shaders, GPU memory allocation, and queue synchronization.
- Implemented BVH acceleration structures and reworked lighting and shadow models, improving frame rate by 25%.
- Debugged GPU bottlenecks and synchronization bugs with RenderDoc frame captures, keeping frame times stable under heavy scenes.

### ML Research Intern

May 2025 – Aug 2025

*McMaster Centre for Software Certification (McSCert), McMaster University*

*Hamilton, ON*

- Designed and implemented an AI benchmarking framework to evaluate model performance, efficiency, and reliability across diverse datasets.
- Developed justification diagrams to improve the JPipe language and capture software assurance arguments.
- Built a syntax highlighter with custom regular expressions, contributing to better tooling for the JPipe language.

### Android Developer

Apr 2024 – Aug 2024

*Howell Data Systems*

*Sarnia, ON*

- Solely built and published a client dashboard app on the Google Play Store in Kotlin and Jetpack Compose, used by hundreds of clients.
- Ensured the app's functionality by conducting extensive testing and troubleshooting, addressing issues like API integration and UI state management.

## PROJECTS

### HoopsIQ | Python, FastAPI, Scikit-learn, Pandas, NumPy

May 2025

- Developed a machine learning pipeline to predict NBA game outcomes using 7 seasons of historical game data and 30+ engineered features.
- Implemented a Ridge Classifier trained via sequential time-series splits to simulate real-world forecasting.
- Integrated a JPipe software assurance case to formalize the release criteria for model deployment (accuracy, transparency, ethics).

### AirCad | Python, JavaScript, HTML/CSS, MediaPipe, OpenCV, Flask, Three.js

April 2025

- Created a web app that lets users draw 2D shapes in the air with their finger and extrude them into 3D models using hand gestures alone.
- Applied computer vision and gesture recognition with MediaPipe and OpenCV to capture and process motion data in real time.
- Optimized rendering pipelines in Three.js, reducing latency and improving interactivity for complex shapes.

## TECHNICAL SKILLS

**Languages:** Java, Python, C/C++, SQL, JavaScript, HTML/CSS, Rust, Swift

**Frameworks:** React, Node.js, Flask, FastAPI, Bevy, TFLite, Huggingface

**Developer Tools:** Git, Docker, Google Cloud Platform, Visual Studio, PyCharm, IntelliJ, Android Studio, Xcode

**Libraries & Graphics:** Pandas, NumPy, Matplotlib, Pytorch, Three.js, WGPU, Vulkan, OpenGL, GLSL