

Kevin Hill

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EDUCATION

Western University

London, ON

Bachelor of Science in Computer Science (Honours pending declaration)

Sept. 2026 – Apr. 2030

- Western Scholarship of Excellence recipient; Western WISE student

EXPERIENCE

Teaching Executive

Sept. 2025 – June 2026

Oakridge STEAM ICAC

- Created and taught original STEAM lesson plans for a 10-member club throughout the school year
- Designed and ran a club-wide paper bridge-building competition, challenging teams to build a structure that could support multiple phones and hold up against wind

Teacher Assistant Co-Op

Jan. 2025 – June 2025

Riverside Public School

- Supported a 28-student grade 4 classroom for a full semester-long co-op, assisting the lead teacher with lessons and activities and adapting instruction to fit a range of learning styles and needs
- Designed and led a coding event teaching foundational programming to roughly 200 grade 2–6 students, as measured by every student completing an individual Scratch project, across 8 classes of ~25 students, and recruited and coordinated student volunteers for 1-on-1 support

PROJECTS

RivalRuns | *Python, MediaPipe, OpenCV, Panda3D, WebSocket* | Devpost

2026

- Built a real-time, motion-controlled two-player game in a single hack day with two teammates, placing 2nd among all teams at Hack the Valley's Hack Days
- Implemented pose and hand tracking with MediaPipe and OpenCV to control gameplay including lane changes, jumps, ducks, and shields all from a single webcam, synced across two machines with a WebSocket layer built on Python's asyncio

ML Emotion Detection | *Python, OpenCV, TensorFlow/Keras*

2026

- Trained a facial emotion classifier, reaching 61% accuracy on the test set with a single model
- Improved accuracy to 65%, as measured by held-out test set performance, by combining 5 models with different strengths into an ensemble

Downwind | *Python, HTML, FastAPI, Three.js, globe.gl, NASA FIRMS, Open-Meteo* | Devpost

2026

- Tracked roughly 500,000 fire detections worldwide, refreshed every 10 minutes, by merging NASA FIRMS satellite data with Natural Resources Canada's ground-confirmed reports. Built at Hack Social 2026
- Built a fire-spread and smoke-exposure forecast that returns results for any entered address within a few seconds, running a Monte Carlo simulation against Open-Meteo wind data through a FastAPI backend
- Rendered tens of thousands of fires smoothly on an interactive 3D globe by batching all markers into a single draw call and capping mobile pixel density, deployed via Render

Shape Tracker | *Python, OpenCV, MediaPipe*

2026

- Built a real-time hand-tracking tool that detects thumb and index fingertips across both hands simultaneously using MediaPipe's hand landmark model
- Rendered a live quadrilateral between the four tracked points and applied switchable visual effects inside it including blur, pixelate, edge detection, sepia, and more — toggled in real time via keyboard input

Connect4 ML Bot | *Python, PyTorch, Flask*

2026

- Built an AlphaZero-style bot for Connect 4 that learns purely through self-play, combining a PyTorch neural network with Monte Carlo Tree Search to select moves
- Trained the model through iterative self-play cycles with checkpointing, and built a Flask web interface to play against it and view live evaluation metrics

TECHNICAL SKILLS

Languages: Python, C++, JavaScript, HTML/CSS

Frameworks: Node.js, Flask, FastAPI

Libraries: OpenCV, TensorFlow/Keras, PyTorch, MediaPipe, Three.js, globe.gl, Panda3D/Ursina, Raylib

Tools & APIs: Git, GitHub, VS Code, Claude API, n8n, Render, NASA FIRMS, Open-Meteo API