Radmehr Vafadar

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Education

Queen's University — Kingston, ON
Bachelor of Computing (Hons.) Specialization In - Cognitive Science — *Aug. 2023 – May 2027*

Google CyberSecurity
Professional Certificate — *June 2025 – Aug. 2025*

Relevant Coursework

- Numerical Optimization for AI
- Operating Systems
- Database Management Systems
- Data Structures and Algorithms
- Computer Architecture
- Software Architecture

Experience

Machine Learning Project Lead — July 2025 – August 2025
Queen's University — *Kingston, ON*

- Led a 4-person team to develop and deploy a machine learning model for fake news detection, utilizing a large dataset
- Utilized scikit-learn to develop a Passive Aggressive Classifier for efficient and accurate fraudulent news detection
- Managed the full software development life cycle, emphasizing clear communication and collaborative problem-solving to ensure project success

Independent Researcher — April 2025 – June 2025
Queen's University — *Kingston, ON*

- Designed and coded a simulation to model flocking behavior using the boids algorithm, exploring properties in a virtual environment
- Utilized linear regression to analyze simulation data, deriving insights into agent coordination and system dynamics
- Optimized simulation efficiency and deployed complex simulations in a browser environment using JavaScript and TypeScript

Teaching Assistant — September 2025 – Present
Queen's University — *Kingston, ON*

- Led labs and tutorials to reinforce core programming concepts for first-year engineering students
- Graded assignments, quizzes with accuracy and fairness
- Standardized grading through collaboration with instructors and fellow TAs
- Prepared classrooms, maintained course websites, and resolved technical issues
- Completed training to enhance teaching effectiveness and subject knowledge

Projects

Distributed Video Streaming | *Python, Kafka, Java, Unix/Linux* — September 2025 – Present

- Implemented a real-time distributed video streaming pipeline using Kafka, Python, OpenCV, and Flask, enabling seamless transmission and web-based playback of video frames from multiple sources
- Designed the system to support both live webcam and video file inputs, with scalable architecture for multi-producer and multi-consumer setups across Kafka clusters
- Leveraged Docker for consistent environment setup and simplified deployment of Kafka and Zookeeper services, ensuring robust cross-platform functionality

Mine Sweeper | *Python, Pygame, Aseprite* — August 2025 – Present

- Developed a fully interactive Minesweeper game in Python using Pygame, with a dynamic 16x16 grid and 40 randomly placed bombs
- Implemented logic to display the number of adjacent bombs after each user click
- Integrated a seamless tool selection toggle for switching between bomb placement and flagging modes during live gameplay