Radmehr Vafadar

3rd Year Computer Science Student at Queen's University

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Education

Queen's University Kingston, ON

Bachelor of Computing (Hons.) Specialization In - Cognitive Science *Aug. 2023 – May 2027*

Relevant Coursework: Numerical Optimization for AI, Operating Systems, Database Management Systems, Data Structures and Algorithms, Computer Architecture, Software Architecture

Google CyberSecurity

Professional Certificate *June 2025 – Aug. 2025*

Experience

Machine Learning Project Lead July 2025 – August 2025

Queen's University *Kingston, ON*

- 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
- Utilized linear regression to analyze simulation data, insights into agent coordination and system dynamics
- Optimized and deployed complex simulations in a browser environment using JavaScript and TypeScript

Teaching Assistant September 2025 – Present

Stephen J. R. Smith Faculty of Engineering and Applied Science at 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

Leadership

Computing Students' Association Spring 2024 – Present

COMPSA - Director *Queen's University*

- Coordinated and executed professional development initiatives, including leading a 3-person team in *Innovate*, a program designed to foster a startup culture at Queen's University.
- Founded a new funding pipeline within COMPSA to support student-led computing projects, enabling peers to access resources for personal and entrepreneurial development with +3,000$ in funding.
- Promoted to Director of Merchandise, managing a 5-person team to design, source, and distribute apparel and products that strengthened student engagement and community identity.