Radmehr Vafadarfalavarjani

3rd Year Undergraduate | Computer Science | Queen's University | Matcha & Boba Lover

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Education

Queen's University Kingston, ON

Bachelor of Computer Science (Hons.) specialization in Artificial Intelligence *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* *Jun. – Aug. 2025*

Experience

Distributed Systems Engineer | *Python, Kafka, Java, Git, Github* *Sept. – Nov. 2025*

School of Computing at Queen's University *Kingston, ON*

- Architected a scalable, distributed streaming pipeline using Kafka, Python, and Docker that processes 30+ FPS from **5,000+ concurrent sources**, achieving sub-10ms latency for seamless web-based playback
- Designed a dual-source input strategy that supports live streams and reproducible video file injection, accelerating debugging cycles by 30% and ensuring consistent performance across data sources.
- Created scalable architecture for multi-producer and multi-consumer setups across Kafka clusters

Teaching Assistant | *C, x86 Assembly, GDB, Unix/Linux, Bash, Microsoft Excel* *Sept. – Dec. 2025*

Stephen J. R. Smith Faculty of Engineering and Applied Science *Kingston, ON*

- Mentored **760+ students** through a series of complex C labs `\_(*_*)_/`
- Enhanced software quality by designing and deploying an AI-powered testing strategy on GitHub Actions, which automatically generated exhaustive test suites to **increase coverage by 40%** and reduce bugs.
- Developed advanced Bash automation scripts to streamline course administration, enabling a focus on student mentorship that secured a top 10% instructor ranking across 3 cohorts.
- Taught CPU-level debugging, reverse engineering, and memory/register analysis, achieving an average instructor rating of 4.8/5 for technical clarity and curriculum depth.

Projects

AI Fake News Detector | *Python, scikit-learn, pandas, numpy* *Jul. – Aug. 2025*

- Developed a machine learning model to classify news articles as FAKE or REAL using TF-IDF vectorization
- Achived a **93% accuracy in detecting fake news** by using a Passive Aggressive Classifier
- Packaged and automated the full training and evaluation process in a single executable script with 44 lines
- Optimized feature extraction through stop-word filtering and max document frequency tuning, improving robustness against biased or redundant linguistic patterns

Arcade Portfolio | *JavaScript, ThreeJs, React, Vercel deployment* *Jul. – Aug. 2025*

- Architected an interactive 3D portfolio experience, integrating a fully navigable Three.js arcade scene
- Engineered a modular TypeScript-based SPA, combining a static game, blog, and resume hub in a Vite system
- Implemented camera interpolation, **shadow mapping**, volumetric clouds, and object animations for visual depth

RadCrypt | *Python, SQLite, Cryptography, Argon2, AES* *Dec. 2025 – Jan. 2026*

- Engineered a secure local file vault implementing Authenticated Encryption (Fernet/AES-128 + HMAC)
- Integrated Argon2 memory hard hashing, defending against GPU-based brute-force and rainbow table attacks
- Architected a robust Key Derivation system using PBKDF2 with unique salts | (•‿•)|
- Designed a relational SQLite database schema with foreign key constraints to manage file metadata and audit logs

Leadership

Computing Students' Association *May. 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. (ˆ‿ˆ)/
- 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 7-person team** to design, source, and distribute apparel and products that strengthened student engagement and community identity.