Nick Tavakoli Dastjerdi

uOttawa CS Student, Hitachi Intern

36 Robinson Ave., K1N 0G4, Ottawa, Ontario CA

nick.tavakolidastjerdi@urbanandmainlines.com (613) 294-6363 Qerope /Qerope

SKILLS

Networking	Ethernet/IP | Redundancy | CBTC | RF Design | Fluidmesh | Network Design & Analysis | CCNA | 3GPP
Programming	Python | Java | C/C++ | C# | PHP | Typescript | JavaScript | HTML/CSS | SQL | Ruby
Frameworks	React | Node.js | TensorFlow | Pandas | NumPy | SimPy | Next.js | Bootstrap
Tools	Git | Docker | AWS | GCP | Azure | MATLAB | Shell Scripting | Jenkins | CI/CD | JIRA
Technologies	Edge Computing | ML/DL/AI | Big Data | Smart Contracts | Web3/IPFS
Cybersecurity	Network Security | Cryptography | IDS/IPS | SIEM | SOC | SOC 2 | ISO 27001
Languages	English | French | Persian

WORK EXPERIENCE

Site Deployment Intern at Hitachi **2024-05-01 - Present**

Reduced deployment time by 300% through the development of automated configuration scripts.
Contributed to network analysis, configuration, and troubleshooting efforts, ensuring optimal system performance and redundancy.

Game Developer Intern at Broken Teapot Studios Inc. **2024-01-01 - 2024-01-31**

Implemented dynamic AI routines for NPCs, improving gameplay fluidity and player engagement.
Optimized game shader performance by 115%, focusing on efficient resource management.
Contributed to the development of algorithms that incorporated real-time network communication principles, enhancing the overall game experience.

Full Stack Web Developer at RTXComputers Electronics Provider **2022-05-01 - 2022-08-31**

Designed and developed several web applications and tools, including a customer support system and a product recommendation system. Gained experience in configuring communication networks and troubleshooting web infrastructure for better user engagement.

Lead Solutions Development at PanQ Solutions **2020-11-01 - 2022-11-30**

Founded PanQ, an independent game studio with a mission to create distinctive and innovative gaming experiences.
Implemented low-latency, high-redundancy AR/VR games to deliver a smooth, reliable, and immersive experience for players with scaling solutions and ongoing maintenance.

PROJECTS

uOttaHack Hackathon Infrastructure

https://uottahack.ca

Designed and developed the core infrastructure for uOttaHack, one of the largest hackathons at the University of Ottawa. Responsibilities included building and maintaining the main event website, managing attendee registrations, setting up the judging system, and ensuring smooth operation of the server environments. Worked on Unix server configurations and system administration to support the backend infrastructure for seamless hackathon execution.

IoT Smart Home System

Designed and implemented an IoT-based smart home system that integrates multiple devices for automated control and monitoring. The system used MQTT for communication between devices and was built with a focus on low-power consumption and high reliability. The project involved developing a cloud-based dashboard for remote monitoring and control, providing users with real-time status updates.

Edge Computing for Real-Time Data Processing

Developed an edge computing system that processes real-time data from multiple sensors, reducing latency by 60% compared to traditional cloud-based systems. The edge nodes were designed to run lightweight machine learning models for immediate data analysis. The system was optimized for performance using Python, TensorFlow Lite, and Raspberry Pi. It was applied to monitor environmental conditions in remote areas.

5G Network Simulation with RISC-V Architecture

https://github.com/Qerope/Elysium

Led the development of a 5G network simulation using RISC-V architecture. The project focused on the implementation of 3GPP-compliant systems using open-source tools to simulate key 5G functionalities like high throughput, low latency, and efficient resource management. The work involved low-level programming on RISC-V and the integration of virtualized network functions to simulate a 5G radio access network.

Low-Power Edge Computing for 5G Networks
Developed a low-power edge computing solution tailored for 5G networks, using lightweight processing algorithms and distributed architectures to enable faster data processing at the edge. The system utilized SDN (Software Defined Networking) and NFV (Network Functions Virtualization) principles to optimize network performance while maintaining energy efficiency. The solution was tested on real-world scenarios with low-power sensors and 5G base stations.

VOLUNTEER

Development Lead at uOttaHack — **2023-07-01 - Present**
Board of Directors Member at Engineering Students' Society, University of Ottawa — **2023-09-01 - 2024-04-30**
CALE 2024 Conference Organizer at Engineering Student Societies' Council of Ontario — **2023-11-01 - 2024-03-31**

EDUCATION

BSc Computer Science, Minor in Physics at University of Ottawa — **2024-09-01 - 2026-04-01**
Actively engaged in cutting-edge research in networking technologies, including communication protocols and security. Recognized for top-tier performance in academic and project work related to networking, with a focus on high-availability and redundancy principles.

BSc Physics, BASc Electrical Engineering at University of Ottawa — **2022-09-01 - 2024-04-01**
Studying core principles of physics with an emphasis on experimental techniques, quantum mechanics, and electromagnetism. In parallel, pursuing a Bachelor of Applied Science in Electrical Engineering, focusing on circuits, signals, and communications systems. Gaining hands-on experience in engineering labs and physics research projects.

AWARDS

Scholarship for Merit through Innovation in Student Publications at UOSU — **2024-02-01**
5G Connectivity for Cross Border Challenge at Telus — **2023-07-01**
Solutions Lab & Idea's Lab Award at University of Ottawa - eHub - MDA — **2023-02-01**
Youngest Startup of Iran at Tabnak — **2017-06-01**

CERTIFICATES

Statistics — Stanford University
Network Security, Python Programming, 5G/3GPP — Huawei Talent
Java Programming, Problem Solving — HackerRank
Art Directing Games with Vision and Purpose — Iran Computer and Video Games Foundation

PUBLICATIONS

Impact Of Telemedicine Intervention On Patient Satisfaction For Hypertensive Patients — **2023-02-01**
Investigating Human Cognitive Learning Process In An Artistic Context — **2017-05-01**