

# Arian Haghpars

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Toronto, ON

## SKILLS

- Leadership
- Front-end development (React, Tailwind, Nextjs)
- Programming (C++, Python, Javascript)
- Critical thinking
- Problem-solving
- Software development life cycle
- Backend development (node, MongoDB, SQL)
- Communication
- Time management
- Team work
- MS Office Suite (MS Word, MS Excel & MS PowerPoint)
- Machine learning (Pytorch, Keras)

## EXPERIENCE

### MACHINE LEARNING RESEARCHER

Toronto, ON

York university

January 2024 - Present

- Assisted in the development of a network-aware multi-agent reinforcement learning (MARL) model, focusing on improving vehicle navigation in dynamically changing road networks.
- Utilized PyTorch to implement and fine-tune Graph Attention neural Networks (GAT) and Q-networks, contributing to the model's ability to make informed routing decisions based on real-time road conditions.
- Participated in the iterative process of training, testing, and optimizing the MARL model, ensuring model robustness and reliability in diverse scenarios.

### UNDERGRADUATE RESEARCHER

Toronto, ON

York university

January 2023 - September 2023

- Conducted research on random walks in random environments and percolation theory under the guidance of Professor Salisbury.
- Designed and implemented algorithms using C++ and Python to analyze, simulate and predict the asymptotic outcomes of random walks
- Presented research findings and insights at annual CMS and CUMC conferences in UofT and UOttawa (Canadian Mathematics Society)

### FULL STACK DEVELOPER

Toronto, ON

Elder Labratory

September 2023 - January 2024

- Took on responsibilities for creating, optimizing, and maintaining server infrastructure using Node js, ensuring reliable performance and efficient data handling using Web Sockets.
- Contributed to the design and implementation of intuitive and responsive user interfaces using React js and Tailwind, aligning with project goals and improving user interaction and satisfaction.
- Collaborated closely with cross-functional teams to integrate server solutions with existing systems, enhancing overall operational efficiency and productivity.

### FOUNDER OF THE RESEARCH SOCIETY AT YORK

Toronto, ON

- Founded the Research Society at York (Rsay) student organization, developing its mission, governance structure, and membership base to foster a collaborative interdisciplinary research community
- Organized events, workshops, and seminars, providing members with opportunities for research collaboration, skill development, and networking with industry and academic professionals
- Implemented feedback mechanisms to continually assess and improve the society's events, resources, and overall impact on the student research community.

**WEB DEVELOPER****Toronto, ON**

York University

July 2023 - Present

- Develop and maintain the Research Society's website at York University using Nextjs, Tailwind and MongoDB
- Ensure website functionality and performance across various platforms and devices
- Utilize front-end and back-end technologies to create a user-friendly experience

**MATHEMATICS TUTOR****Toronto, ON**

Oxford Learning Centres Inc

December 2022 - September 2023

- Provide personalized tutoring in mathematics to over 50 students of various grade levels
- Utilize strong multitasking skills to manage 4 students and tasks simultaneously
- Employ effective communication skills to explain complex mathematical concepts clearly

**EDUCATION**

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**BACHELOR OF SCIENCE - BS IN COMPUTER SCIENCE CANDIDATE***Expected graduation Jun 2026*

Lassonde School of Engineering - York University

**PROFILES**

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<https://arianhgh.github.io> - digital portfolio[www.linkedin.com/in/arian-haghparast-3a5743260/](https://www.linkedin.com/in/arian-haghparast-3a5743260/) - LinkedIn**PROJECTS**

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## York Courses

Description: A responsive web application allowing York University students to search for courses. The interface is user-friendly and designed for an optimal user experience.

Technologies: React, Next.js, Tailwind CSS

## Rsay

Description: Official website for the Research Society at York University. Features a fully responsive design and a robust backend to manage content.

Technologies: Next.js, Tailwind CSS, MongoDB

## Airchair

Description: A full-stack application enabling interaction and control over autonomous wheelchairs via a web interface.

Technologies: React, Node.js

## Stock Price Forecasting

Description: A machine learning model using LSTM for predicting stock price trends based on historical data.  
Technologies: Python, Keras, TensorFlow

#### Equibot

Description: A robotic system utilizing computer vision and reinforcement learning to balance a ball on a moving platform.  
Technologies: Python, Arduino

#### Pendubot

Description: An advanced self-balancing robotic system that employs control algorithms to balance an inverted pendulum.  
Technologies: Control algorithms, Raspberry Pi