

# Nafiseh Valizadeh (She/Her)

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## HIGHLIGHTS OF QUALIFICATIONS

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- Second year Master's of Software Engineering student eligible for 4-12 month co-op opportunity.
- Proficient in Python and Bash scripting from diverse projects, including incident management and Kubernetes simulation models. Experienced in PyTest for effective software testing in research and development scenarios.
- Gained expertise in cloud service automation and VPS monitoring, utilizing tools like Ansible, Prometheus, and Grafana.
- Skilled in algorithms and object-oriented design principles, demonstrated by ongoing thesis project and comprehensive course projects
- Developed teamwork and communication skills through collaborative work in various industry and academic settings.

## EDUCATION

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**McMaster University**  
*Master of Applied Science in Software Engineering*

Sep 2022 - Now  
Hamilton, ON, Canada

**Alzahra University**  
*Bachelor of Engineering in Computer Engineering*

Sep. 2017 - April. 2022  
Tehran, Iran

## SKILLS

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**Programming:** Python, C++, Java, SQL, MongoDB, Shell Scripting, Django, HTML, CSS

**Operating Systems:** Linux-based systems

**DevOps Tools:** Git, Docker, Kubernetes, Prometheus, Grafana, PyTest, K6

**Languages:** English (TOEFL:107), Persian (Native)

## RESEARCH AND WORK EXPERIENCE

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**Kubernetes Performance Model**  
*Research Assistant*

McMaster University  
Sep. 2022 - Now

- Leading the design and development of a Kubernetes performance model, grounded in Markov models theory, aimed at simulating cost-effective cluster setups for complex software systems with scalability needs.
- Focusing on leveraging Python for model development, ensuring the application of rigorous testing methodologies to maintain the model's accuracy and reliability.
- Continuously testing and refining the model using PyTest, prioritizing the resilience and robustness of the performance model to accurately reflect real-world Kubernetes deployment scenarios.

**Cloudzy Infrastructure as a Service**  
*DevOps Engineer Intern*

abrNOC Company  
Nov. 2021 - March. 2022

- Contributed across multiple phases of the cloud service development cycle (build, test, deploy, and monitoring) on various Linux distributions, utilizing technology stacks including Docker, Ansible, PyTest, Prometheus, and Grafana, while working with cross-functional teams and adapting to Agile project management methodologies for efficient and scalable cloud solutions.
- Automated the management of recurring infrastructure issues and incidents using diverse scripting languages, enhancing operational efficiency and system reliability amidst Agile environments.

## MAIN PROJECTS

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### Azure VMs Capacity Planning

*Python, BlazeMeter, AppDynamics*

Designed a capacity planning tool for suggesting the optimized number and configuration of VMs for Cubic transportation company. Employed linear optimization. Given the key performance indicators of each VM (throughput and response time) to suggest cost effective set of VMs for each application

McMaster University-Cubic Transportation

*Jan. 2023. - Oct 2023*

### McFood Delivery System

*Spring Boot, PostgreSQL, Docker*

Developed a microservice web application for food delivery using Spring Boot. The application comprises various services including food-provider, user-management, tracker, billing, and cart-management, all communicating through REST API and RabbitMQ. Initially designed based on Hexagonal Architecture principles, these components were effectively transformed into individual microservices.

McMaster University

*Sep. 2022 - Dec 2022*

### API Management System

*JavaScript, K6, Prometheus, Grafana*

Designed an API management system to centralize the APIs of various companies, enhancing merchant accessibility to these services. The system's architecture includes a Gateway for handling incoming requests, a developer portal for buyer access to purchased APIs, a repository for API records, and a monitoring component for continuous health checks through load testing. Implemented continuous performance tests using K6, an open-source testing tool, and monitored real-time data using Prometheus.

Alzahra University

*Jan. 2022 - April 2022*

### Book Management

*Spring Boot, PostgreSQL*

Developed a Spring Boot web application for a bookshop, facilitating book access management for users and enabling authors to publish their works. The project is structured on MVC architecture, with components (Book, Authentication, Search) communicating via REST API. Data storage is efficiently handled using a PostgreSQL database.

Alzahra University

*May. 2021 - June 2021*

### Question and Answer Forum

*Django, Bootstrap, PostgreSQL*

Developed a question-and-answer web application, akin to Stack Overflow, enabling users to post questions and provide answers. The project was architecturally designed using the MVT (Model-View-Template) framework in Django. Database models were meticulously crafted in conjunction with UML diagrams to ensure a robust and efficient structure.

Karademy Bootcamp

*Sep. 2020 - Dec 2020*

## TEACHING – TEACHING ASSISTING

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### Performance Analysis of Computer Systems

Winter 2024

- Teach mathematical modeling and simulation for system behavior analysis.
- Guide hardware and software decisions based on modeling results

### Binding Theory to Practice

Fall 2023

- Assisted coding lab sessions for over 150 students
- Aided in implementing time efficient Algorithms

### Software Testing

Winter 2023

- Assisted tutorial classes for over 250 students
- Helped students in understanding various functional and non-functional testing methodologies
- Helped in using JUnit as a testing framework.

### Computer Architecture

Winter 2022

- Assisted students in grasping the concepts of CPU instructions and pipeline processing

### Operating Systems Lab

Fall 2021

- Conducted tutorial sessions to educate students about the basics of Linux kernel and Unix operating systems
- Guided them in utilizing Linux commands effectively. Instructed them on script writing within the Linux environment

### Linux LPIC1 Workshop

June 2021

- Held a workshop for teaching the LPIC1 concepts to students from different universities