(587)566-5117
Department of Computing Science,
University of Alberta, Edmonton,
Alberta

Hadi Rohani

Computer Science Researcher

Email: rouhani@ualberta.ca
Website: hadi2525.github.io

Highlights

I have these special skills trained for the position.

Skills

Tools and Languages	C/C++, Python, Git, Linux, HTML/XML,
Quantitative Research	Convex optimization, Queueing theory, Computer Networks, Algorithm, Markov decision process, Data structure, Machine Learning, AI and reinforcement learning
Organizational skills	Team-oriented, Public speaker, Acquinted with Canadian/European work environment, Active listener, Program planner and administrator
Communication	English (fluent speaker), Persian (fluent speaker), German (reading and writing)

Technical Experience

Computer Science Researcher **Sep 2020 — Present**
Department of Computing Science, University of Alberta *Edmonton, Alberta*

- Developed an API to solve convex optimization problem using `cvxpy Python` for sizing of charging stations co-located with renewable energy resources. Real data is used as training data to evaluate the charging system modeling. Machine learning tools (`scipy, sklearn, pandas`) are used to learn the data.
  supervisors: **Dr. Omid Ardakanian** and **Dr. Petr Musilek**
- Analyzing differential privacy in Machine learning methods for smart meters. A team-led by me worked on a machine learning API for home smart meters to evaluate differential privacy mechanism.
  supervisor: **Dr. Nidhi Hegde**
- Led a team-based project for APIC Hackathon competion where an API was developed in `python` to detect rooftop from Google Maps and recommend the best sizing requirement for installation of solar panel. The team worked interactively through `git`.
- As a lab instructor, I developed an API in `python` to identify the anomaly in student's performance in their experiments.

Teaching Assistant **Sep 2020 — Dec 2020**
Department of Computing Science, University of Alberta *Edmonton, Alberta*

- Worked collaboratively with a team of TAs to arrange the content of an intermediate course on python
- Provided solutions to the assignments and marked over 200 python coding assignments using automations (makefile, using python API, bash command line etc.)
- Provided daily reports through `git`.

Data Science Researcher **Dec 2019 — Jun 2020**
Universität Stuttgart *Stuttgart, Germany*

- I Led three data science and probability theory projects on implementation of novel density estimation in power system analysis and using machine learning algorithms evaluate the feasibility of electric vehicle-to-grid power transaction.
- Supervised two computer science master students with their projects on smart energy systems.

Test Tech Lead **Jul 2019 — Nov 2019**
Surplec HV *Spruce Grove, Alberta*

- Led the Test Department to detect faults and short circuits in transformers using experiment data.
- Organized the testing environment in the department and made a structured data acquisition to capture/record/reuse the experiment data.
- I developed an API in MS Excel to verify that running experiments on transformers follow all standards.

Education

PhD in Computing Science, *University of Alberta, Edmonton, Canada* — Sep 2020 - Present
M.Sc. in Electrical & Computer Engineering, *University of Alberta, Edmonton, Canada* — Sep 2016 - Sep 2019
M.Sc. (2nd top student) in Electrical & Computer Engineering, *Shiraz University, Shiraz, Iran* — Sep 2013 - Sep 2015
B.Sc. (with distinction) in Electrical & Computer Engineering, *Shiraz University, Shiraz, Iran* — Sep 2009 - Sep 2013

Activities & Achievements

1st runner up APIC-Hackathon — Jul 2021
Ranked among the top 100 graduate students to recieve Vanier Scholarship — Winter 2018
President and CEO of a non-profit Iranian community based in Edmonton — May 2017 - May 2018
Recipient of Graduate Recruitment Scholarship ($ 15000) — Sep 2020 - Sep 2021

Related Courses

Computer Networks & Performance	Operating Systems (Linux)	Privacy in Machine Learning	Algorithms II
Machine Learning A-Z (Udemy)	Data Science w/ Python (IBM)	Data structure	Neural Networks
Online Optimization	Convex optimization		

Course Projects

Simulator for Queueing systems [**Python Code**]
Computer Networks & Performance

- I developed an algorithm using various data structures including doubly linked lists, tensors, hash tables to model a queueing system
- An object-oriented programming API was developed to represent users and servers.
- I improved the coding so that it would have the best time complexity

Applied Machine Learning Projects

- Predict the salary of a company given some features in a real dataset using regression models from `sklearn` library.
- Develop an API to train a machine learning model to predict the job positions of a company based on available features in their dataset using decision tree regression model from `sklearn` in Python.

Programming in Linux
Operating Systems Concept

- Developed a C programming code that shows the virtual memory allocation of a running process in Linux. [C Code]
- I wrote a C code to model the TCP communication between a server and several clients. This communication achieved via local and external IP addresses.
- Working with `Valgrind` in C/Linux.