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Department of Computing Science,
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Hadi Rohani

Computer Science Researcher

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Highlights

- Three years of experience working with python programming and algorithm development
- Proficient in data visualization with **Tableau**, **Seaborn**, **plotly**, and **matplotlib** from Python
- Highly skilled in developing machine learning tools and conducting comprehensive report as a data scientist
- Team-player with strong communication and leadership skills gained from real experience
- With more than 3 years of working for Canadian and European companies
- I have a Canadian Permanent Residency status and so I am eligible to work full-time in Canada

Skills

Tools & Languages	C, Python, Git, Linux, SQL, Worked with cloud computation and ComputeCanada
Quantitative topics	Computer networks, algorithm, Markov process, data structure, machine Learning, deep learning
Organizational skills	Team-oriented, public speaker, active listener, program planner and administrator
Communication	English (fluent speaker), Persian (fluent speaker), German (reading and writing)

Projects

<**Medical Science**>

1- Pharmaceutical Drug review - A machine learning & data analysis [Python Code]

Supervised a data analysis using natural language processing and machine learning tools to analyze reviews on drugs

- Leveraged the data obtaining techniques from **Pandas** and visualization tools and demistify the pattern in the data.
- Developed **Wordcloud** package for NLP implementation and sentiment analysis
- The trained machine learning model provided an accuracy of more than 90%.

2- Breast cancer diagnosis using Machine Learning [Python Code]

Supervised Machine Learning using classification methods from Scikit-learn python

- Implemented 7 different classification ML models to compare diagnostic accuracy
- Open source code and data analysis report is available

<**Energy sector**>

1- Sizing of Charging Stations Co-located with Solar Panel and Battery Storage

*A business project in collaboration with **ATCO Electric** company, Alberta, Canada*

- Held regular business meetings and articulate the problem as per the client's need.
- Translated the problem into a mathematical optimization solution
- Developed an API in python and provided a comprehensive solution
- Took the initiative to generalize the API for several similar problems and the final work was a success

2- Rooftop solar panel sizing detection using deep learning models [**Hackathon 1st runner up winner!**]

Alberta power industry consortium (APIC) 2021 Hackathon Competition

- Led a team of programmers for APIC Hackathon competition
- Developed an API to detect feasible rooftop area from Google Maps using computer vision tools and recommend the best sizing requirement.
- The team worked interactively in an agile framework with specs of CI/CD.

<**Other Applied ML small projects in finance and business**>

- Predicted the company employees salary using various regression models.
- Developed a machine learning model to predict job positions of a company.

<**Computer Science course projects**>

C Coding in Linux [C Code]

- Developed a C programming code that shows the virtual memory allocation of a running process in Linux.
- I wrote a C code to model a secure TCP communication between a server and several clients.
- Working with Valgrind in C/Linux.

Simulator for systems with queues [Python Code]

- 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 model customers and servers.
- I improved the coding so that it would have the best time complexity

Work Experience

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

- Developed APIs to solve optimization problems with `cvxpy, cvxopt python`.
- Deploy privacy in Machine learning training models. I took the leadership of a team of MLops evaluate differential privacy mechanism.
  supervisor: **Dr. Nidhi Hegde - Borealis AI**

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

- Worked collaboratively with a team of TAs to organize the content of a course on `python`.
- Provided solutions to assignments and marked over 200 python coding with automations
- Supervised undergraduate students with their coding style to improve their coding skills.

Data Science Researcher **Dec 2019 — Jun 2020**
Service Computing, Univeristy of Stuttgart, *Stuttgart, Germany*

- I took the leadership of three projects in data science and advanced probability theory using machine learning algorithms.
- Supervised a number of computer science MSc students.
- Practiced agile framework with scrum for research (score)

Test Tech Lead **Jul 2019 — Nov 2019**
Surplec HV, *Spruce Grove, Alberta [HQ: Sherbrooke, Quebec]*

- Supervised the Test Department to detect anomalies in transformers using experiment data.
- Took the initiative to revamp the testing environment and made an automation for data acquisition for experiments.
- My API significantly reduced the delay time in delivering test documents to the quality department.

Senior Teaching Instructor **Sep 2018 — Sep 2019**
Department of Electrical & Computer Engineering, University of Alberta, *Edmonton, Canada*

- Supervised a number of teaching assistants on delivering their lectures.
- Organized weekly meeting to address concerns and problems with lectures and instructor notes.
- Assessed lectures and clarified materials for 3 classes weekly.

National Elite Researcher in Electrical Engineering **Sep 2012 — Sep 2015**
Department of Power & Control Engineering, Shiraz University, *Shiraz, Iran*

- I was awarded this position due to being the top BSc student in Electrical Engineering at Shiraz University.
- Developed stochastic models to apply to random events happening in a real power system.
- Held regular meetings with the clients from the electric regional company to understand their problem and address the solution at our best.
- Used the real world examples and data to evaluate our proposal.

Solar Panel Design Engineer Consultant **Jan 2012 — May 2012**
Pars Rassam Electric, *Shiraz, Iran*

- Consulted on a contract project to equip rural road signs with solar-powered LEDs
- Developed a prototype for the solar powered LED mounted on road signs
- Held regular meetings with the business client to achieve their desire
- As a contractor, we had limited time to deliver the project and so time management was the key success for me
- The project was deployed on a rural road with more than 100 signs

Education

M.Sc. in Computer Science, *University of Alberta, Edmonton, Canada* — Sep 2020 — Present
M.Sc. in Electrical Engineering, *University of Alberta, Edmonton, Canada* — Sep 2016 — Sep 2019
B.Sc. (with distinction) in Electrical & Computer Engineering, *Shiraz University, Shiraz, Iran* — Sep 2009 — Sep 2013

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 (Stanford)	Economics & Finance in Engineering	

Certificates:

- Machine Learning with Andrew NG - **Coursera** — Jan 2022
- Web Application with Angular - **Codewithmosh.com** — Dec 2021
- Artificial Intelligence Foundations: Machine Learning - **LinkedIn** — Dec 2021
- Version Control System, git - **github** — Sep 2020
- Deep Learning A-Z - **Udemy** — July 2019
- Machine Learning A-Z - **Udemy** — May 2019
- Data Science with Python - **IBM Online** — April 2019

Activities & Achievements

1st runner up APIC-Hackathon	Jul 2021
Ranked among the top 100 graduate students to recieve Vanier Scholarship	Winter 2018
Reached by more than 6000 users in Stackoverflow where I hold 200 reputation points.	-
Active programmer in leetcode.com by solving algorithms in Python and C.	-
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
Travel Award grant from GSA ($ 500) and FGSR ($ 2000)	Jul 2017
Recipient of the Dean's Honor Award as the top BSc Electrical Engineer Student among 164 undergrads	Jul 2013