

Mohammad Hadi Rouhani

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HIGHLIGHTS

- Skilled ML professional with more than three years of demonstrated works in developing ML models.
- Proficient in addressing complex business problems into meaningful ML solutions.
- Excelled at conducting cutting edge research in ML and AI.
- Proven history of successful collaboration with teams of professionals to educate ML concept to talented minorities advocate ML-driven startups.

EDUCATION

M.Sc. in Computer Science , <i>University of Alberta, Edmonton, Canada</i>	2020 — present
M.Sc. in Electrical & Computer Engineering , <i>University of Alberta, Edmonton, Canada</i>	2016 — 2019
B.Sc. (with distinction) in Electrical & Computer Engineering , <i>Shiraz University, Shiraz, Iran</i>	2009 — 2013

SKILLS

Tools & Languages	C, Python (scikit-learn, pytorch, tensorflow, pandas, spark, etc.), Git, Linux, Coud computing plat-forms (Google Cloud, AWS, Docker)
Web dev. tools	Typescript, Node.js, Angular, StreamLit
Quantitative topics	Algorithms and Optimization, Markov chain, data structures, machine Learning, deep learning
Communication	English (fluent), Persian (fluent-native), German (intermediate)

WORK EXPERIENCE

AI/ML Program Manager — AI4Good Lab, Montreal, QC Apr 2022 — Present

- Helped organize a 7-week intensive workshop with more than 100 participants, teaching assistants, lecturers, guest speakers, industry mentors, etc.
- Managed the ML curriculum materials from classical (supervised, unsupervised) machine learning to convolutional neural networks and reinforcement learning.
- Delivered real world problems to exhibit ML model applications in finding solutions.
- Trained talented students/participants to become the future ML startup founders from underrepresented society.

Freelance Data Scientist Jan 2022 — Present

- **ML speaker** at PyYYC, PyData Calgary, and EdmontonPy - [[YouTube](#)] May 2022
- **Continuous Integration ML Deployment (ML-Ops)** [[Python Code](#)] Feb 2022
 - Image recognition analysis with classification models.
 - Optimized the number of estimators for the ensemble learning algorithm with 98 % accuracy.
 - Reduced the input feature dimension and successfully achieved a 97 % accuracy.
 - Developed a pipeline to run ML model in production on Github workflow using docker.
- **Pharmaceutical Drug review** - [[Python Code](#)] Jan 2022
 - Deployed an NLP model and sentiment analysis.
 - The trained machine learning model provided an accuracy of more than 90%.

Researcher — University of Alberta, Edmonton, AB Sep 2020 — Present

- Developed python applications to solve optimization problems. Designed machine learning models for time-series prediction problems.
- Deployed differential privacy in Machine learning training models. Took the leadership of a team of ML devs to evaluate differential privacy mechanism.
- Led a team of programmers to win the 1st runner up at summer E-Hackathon.

Python Teaching Assistant — University of Alberta, Edmonton, AB Sep 2020 — Dec 2020

- Worked collaboratively with a team of TAs to organize the content of **CMPT 274** a course in **python**.
- Provided solutions to assignments and marked over 200 python coding using automation scripts.
- Advised undergraduate students with their coding style to improve their programming skills.

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

- Led three projects in renewable energy and electric vehicle transportation in German electricity market.
- Published a professional article on electric vehicle charging policy and integration
- Supervised a number of computer science MSc students on their projects
- Proven to be an effective team player to maintain a productive relationship between departments.

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

- Supervised the transformer test department to detect anomalies in transformers from experiment data.
- Managed to restructure testing environment and made an automation for data acquisition of experiments.
- Got promoted to the lead position in less than three months (Left the job for an exciting opportunity in Germany).

RELEVANT PUBLICATIONS

- **M. H. Rouhani**, Omid Ardakanian, and Petr Musilek, “Robust Optimal Sizing of Electric Charging Stations equipped with renewable Energy Sources,” *IEEE Power & Energy Society General Meeting (PES-GM)*, 2022 [[Link](#)].
- **M. H. Rouhani**, M. Mohammadi, and M. Aiello, “A Fuzzy-based Soft Clustering Probabilistic Power Flow Considering Inter-Event Time Correlation”, *Electric Power Systems Research Elsevier*, 107677, 2021. [[Link](#)]
- **M. H. Rouhani**, M. Mohammadi, A. Kargarian “Parzen Window Density Estimator Based Probabilistic Power Flow Considering Correlated Uncertainties,” *IEEE Transactions on Sustainable Energy*, vol. 7, no. 3, pp. 1170-1181, 2016. [[Link](#)]

PROJECTS

Sizing of Charging Stations Co-located with Solar Panel and Battery Storage**Oct 2021***Project sponsored by ATCO Electric*

- Worked on addressing the future EV transportation system.
- Analyzed various strategies/possibilities to provide incentives for EV owners.
- Solved a problem to present a fully green charging stations powered by renewables.
- Delivered a prototype model that is 95 % carbon emission free.

Rooftop solar panel sizing detection using deep learning**Jun 2021***Alberta power industry consortium (APIC) 2021 Hackathon Competition*

- Took the leadership of 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.

Simulator for systems with queues [[Python Code](#)]**Mar 2021**

- Developed an algorithm using advanced data structures model a queueing system.

LEADERSHIP ACTIVITIES

- President and CEO of a non-profit Iranian community based in Edmonton
- Hired as a Resident Community Advisor at the University of Alberta Residence
- Helped with hiring process of University of Alberta, Residence

May 2017 — May 2018**May 2017 - Aug 2018****Feb 2018****ACHIEVEMENTS**

- More than 80 citations for research reference in Google Scholar
- 1st runner up winner of APIC E-Hackathon
- Nominated for the Vanier Scholarship, the most prestigious scholarship among Canadian grad schools
- Dean's Certificate of Honor for excellence in leadership and academic, Shiraz University

Present**June 2021****Feb 2018****Jul 2013**