MHD ALI ALOMRANI

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A **graduate student** at UofT specializing in Machine Learning. Graduated from the top-ranked computer science program in Canada. Proficient in **PyTorch, Python, C/C++, Cloud Computing (AWS and Docker)**. High Distinction and Dean's List Scholar Award for several years, teaching assistant for multiple courses, strong leadership, and teamwork skills.

EXPERIENCE

JAN 2019 – PRESENT

TEACHING ASSISTANT, UNIVERISTY OF TORONTO

CSC413: DEEP LEARNING AND COMPUTER VISION.
CSC311: INTRO TO MACHINE LEARNING
CSC324: ADVANCED PROGRAMMING PARADIGMS AND AI IN HASKELL/RACKET.
CSC148: DATA STRUCTURES, OBJECT ORIENTED PROGRAMMING, ALGORITHM COMPLEXITY.
CSC108: PYTHON PROGRAMMING, AND INTRODUCTORY ALGORITHM DESIGN.

I held weekly sessions, graded assignments, quizzes, and term tests, handled student requests, and provided support during online lectures.

APRIL 2021 – SEP 2021

RESEARCH ASSISTANT, UNIVERISTY OF TORONTO

I worked with Dr. Elias Khalil on developing machine learning algorithms to solve online matching problems such as donor organ allocation, ridesharing, and crowdsourcing. Our learning algorithms performed up to 50% better than classical greedy baselines and were evaluated on a range of synthetic and real-world datasets that involve tasks such as recommending movies to users and matching tasks to workers.
Paper can be found here: https://arxiv.org/abs/2109.10380

APR 2019 – AUG 2019

DEVELOPER INTERN, ALLSTATE INSURANCE CANADA

Collaborated with multiple teams to ensure integrity and consistency of business data across North America.
Wrote back-end/front-end scripts in JavaScript for semi-autonomous consistency of server data. Previously, server-status data was updated manually, automation reduced the time by 50%
Debugged network/software issues in UNIX systems and maintained servers.

FEB 2018 – JULY 2018

LEAD INSTRUCTOR/SOFTWARE DEVELOPER, WALI LEARNING INSTITUTE

Taught Machine Learning and Python programming to high-school students
Developed a general-purpose app in Java using Google Firebase and Android Studio.

EDUCATION

SEP 2020 TO PRESENT
MASTER OF ENGINEERING, UNIVERSITY OF TORONTO

Machine Learning and Robotics

APRIL 2020
HONOURS BACHELOR OF SCIENCE, UNIVERSITY OF TORONTO

Specialization in computer science.
University of Toronto Deans List Scholar 2018 – 2020
High Distinction Award
Gamma Award 2019-2020

SIGNIFICANT PROJECTS

DEEP LEARNING - UNIVERSITY OF TORONTO

https://github.com/alomrani/ev-charging-rl-attacks

- Developed **deep reinforcement learning** algorithms to intelligently attack EV charging stations.
- Trained a detection model utilizing fully connected architecture and dropout to achieve up to 90% better accuracy than previous works on RL-generated attacks.
- Preprint can be found here

REINFORCEMENT LEARNING - UNIVERSITY OF TORONTO

https://github.com/lyeskhalil/CORL

- Developed a range of **deep learning** architectures to solve **online matching problems**.
- Implemented all aspects of ML pipeline including data generation, training, and evaluation.
- Our learning algorithms significantly outperformed baselines in real-world datasets such as gMission (matching tasks to workers) and MovieLens (recommending movies to users).

SKILLS

- **PyTorch**, TensorFlow, Scikit-learn, CUDA, Numpy
- **Python**, Java, C++, C, JavaScript, HTML, React.js, and SQL
- OS – Linux/Ubuntu, MacOS, Windows
- Cloud computing – AWS, Docker

- Event organization and management
- Teaching, training, and mentoring
- Leadership and communication skills
- Effective teamwork in diverse teams

REFERENCES

Available on request.