

☎ (647) 679-8032

✉ torabian@yorku.ca

torabian.alireza@gmail.com

Alireza Torabian

🌐 www.eecs.yorku.ca/~torabian/

📅 1997alireza

in alireza-torabian

Graduate Student / Experienced in Machine Learning

As a computer science graduate student at York University, I am focusing my research on the field of machine learning calibration. With a strong foundation in mathematics, I have a comprehensive understanding of the theories and principles behind machine learning. I have completed a number of projects in various areas, including deep learning, computer vision, adversarial machine learning, and natural language processing.

EDUCATION

York University

M.Sc. in COMPUTER SCIENCE, Advised by Ruth Urner, GPA: A+

2021-2023 (Expected)

Toronto, Canada

Amirkabir University of Technology (Tehran Polytechnic)

B.Sc. in COMPUTER (SOFTWARE) ENGINEERING, Advised by Saeedeh Momtazi, GPA: 3.9/4 (In the top 10%)

2015-2020

Tehran, Iran

EXPERIENCE

York University

Machine learning researcher

Jan. 2021 – Present

Toronto, Canada

- Explored desirable properties of calibration models as well as evaluation metrics and analyzed their feasibility and correspondences.

National University of Singapore, Data Privacy and Trustworthy Machine Learning Research Lab

Jul. 2019 – Sep. 2019

Computer vision researcher ([Github repo](#))

Singapore

- Developed a plugin that will obscure images in order to increase privacy that achieved 35% success rate.
- Performed a **black-box adversarial attack on facial recognition** using projected gradient descent with momentum in latent space of FaceNet.
- In face detection attack, the overlap between the detected areas by model and the actual faces is minimized using PGD.
- **Image augmentations** are used to apply the attacks on black-box models.

Diaalog

Deep learning R&D intern ([Clustering github repo](#)), ([Prediction github repo](#))

Jul. 2018 – Dec. 2018

Tehran, Iran

- Developed a Persian **question answering system** in Python Tensorflow.
- LDA is used to cluster similar questions. To expand our dataset, we utilize the answers to questions in the same cluster interchangeably.
- **LSTM Seq2Seq** model with **Luong-style attention** mechanism is used to generate an answer to a question.

Amirkabir University of Technology, Cognitive Robotics Lab

Oct. 2016 – Sep. 2017

Research assistant

Tehran, Iran

- **Object detection** task is performed to detect victims using YOLO model.
- Developed an autonomous exploration algorithm and path planner for robots to help them explore a map simultaneously.

SKILLS

Languages

Python, Java, C++, JavaScript

Machine learning

TensorFlow, PyTorch, OpenCV, Keras, Numpy, Pandas, Scikit-learn, NLTK, Scipy, JAX

Databases

MySQL, PostgreSQL, MongoDB

Other Tools

Git, Unix shell, Jupyter

OTHER PROJECTS

Alternative Actor and Co-Star Suggestion Using a Graph Autoencoder Model

Apr. 2021

- Applied a graph autoencoder to a network of actors using **Keras** in **Python** achieved 99.46% accuracy on reconstruction the graph. [Github repo](#)
- An alternative actor is found by searching the latent space using a K-d tree.
- A co-star is suggested according to the predicted weights from an autoencoder model.

Persian question answering system

Aug. 2020

- My bachelor thesis that was building a question answering system based on a knowledge-base in Python. [Github repo](#)
- SVM and CNN classification models used to classify questions achieved 96% accuracy and F1-score of 92.7%.

Optimization Problems

Jul. 2019

- Implemented unconstrained and constrained optimizations, such as line search, trust region, and log barrier for convex problems. [Github repo](#)

HONORS AND AWARDS

York University Fellowship, C\$62,500 for my master's studies

2021-2022

Second Place in the rescue simulation virtual robot league at RoboCup in Nagoya, Japan

2017

Ranked top 0.5% in nationwide Iranian university entrance exam among 180,000 participants

2015

Member of National Organization for Development of Exceptional Talents (NODET)

2011-2015