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Alireza Torabian

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in alireza-torabian

Graduate Student / Experienced in Machine Learning

Computer science graduate student at York University researching in the field of machine learning calibration with a strong background in mathematics. Experienced in developing machine learning models and the theory behind them. Have done several projects in various areas, especially deep learning, adversarial machine learning, and NLP, mostly using Tensorflow and Keras.

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 (18.25/20) (In the top 10%)

2015-2020

Tehran, Iran

Thesis: Design and Implementation of a Persian Automatic Question Answering System

EXPERIENCE

York University

Research Assistant, Machine Learning

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

Research Intern, Adversarial Machine Learning

Singapore

- Created a black-box adversarial attack to fool face recognition models for enhancing face privacy on social media achieved 35% success rate.
- A face detection attack is optimized to minimize the intersection of the detected face and the original face.
- A face recognition attack maximizes the similarity of the recognized face's latent feature and a target face.

Diallog

Research and Development Intern, NLP

Jul. 2018 – Dec. 2018

Tehran, Iran

- Developed a Persian question answering system in **Python Tensorflow**.
- Using a seq2seq model or clustering by LDA.

Amirkabir University of Technology, Cognitive Robotics Lab

Oct. 2016 – Sep. 2017

Research Assistant

Tehran, Iran

- Developed an autonomous exploration algorithm for robots to help them explore a map simultaneously from different starting points in **C++**.
- Tasks: Path planning, Victim detection using image processing.

SKILLS

Languages

Python, Java, C++

Machine learning

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

Databases

MySQL, PostgreSQL, SPARQL, MongoDB

Web Design

JavaScript, HTML, CSS, Flask, Express.js

Other Tools

Git, Unix shell, Jupyter

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.
- 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

- Developed a question answering system using a knowledge-base in **Python**.
- SVM and CNN classification models used to classify questions achieved 96% accuracy and F1-score of 92.7%.

Optimization Coursework

Jul. 2019

- Implemented unconstrained and constrained optimizations, such as line search, trust region, and log barrier for convex problems.

Neural Dialogue System

Dec. 2018

- Implemented a seq2seq model with an attention mechanism, using **Tensorflow** in **Python**.

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