

As a machine learning researcher and software engineer with a strong math background, I have been involved with different projects in various areas including deep learning, computer vision, adversarial machine learning, and natural language processing.

EXPERIENCE

- Huawei Technologies** Jun. 2023 – Present
R&D software engineer Markham, Canada
- Optimizing LLVM in the high-performance BiSheng compiler.
- York University** Jan. 2021 – Aug. 2023
Machine learning researcher Toronto, Canada
- Established a structured and formal framework for machine learning calibration.
 - Introduced a metric for calibration to achieve a less-biased evaluation.
- Amirkabir University of Technology, NLP Lab** Jan. 2020 – Aug. 2020
NLP researcher ([Github repo](#)) Tehran, Iran
- Implemented a real-time question-answering system based on a knowledge base in Python.
 - A sequence-tagging model based on BERT is used for named entity recognition (NER).
 - SVM and CNN classification models used to classify questions achieved 96% accuracy and F1-score of 92.7%.
- National University of Singapore, Data Privacy and Trustworthy Machine Learning Research Lab** Jul. 2019 – Sep. 2019
Computer vision researcher ([Github repo](#)) Singapore
- Designed a plugin that obscures images for increased privacy using adversarial attacks, with a 35% success rate.
 - Performed [facial recognition attack](#) on FaceNet and [face detection attack](#) on SSD MobileNet V1 using PGD.
 - Used [image augmentations](#) to attack black-box models increased success rate by 1.5x.
- Dialog** Jul. 2018 – Dec. 2018
Deep learning R&D intern ([Clustering Github repo](#)), ([Language model Github repo](#)) Tehran, Iran
- Developed a Persian chatbot using Python Tensorflow.
 - Expanded dataset by clustering questions with LDA and using answers interchangeably.
 - [LSTM Seq2Seq model](#) with [Luong-style attention](#) mechanism is used to generate answers.
- Amirkabir University of Technology, Cognitive Robotics Lab** Oct. 2016 – Sep. 2017
Research assistant Tehran, Iran
- Engineered an autonomous exploration algorithm for robots that won 2nd place in RoboCup 2017.
 - [Object detection](#) task performed to detect victims using YOLO model achieved 99.7% accuracy.

EDUCATION

- York University** 2021-2023
M.Sc. in COMPUTER SCIENCE Toronto, Canada
- Amirkabir University of Technology (Tehran Polytechnic)** 2015-2020
B.Sc. in COMPUTER (SOFTWARE) ENGINEERING Tehran, Iran

SKILLS

Languages	Python, Java, C++, JavaScript
Machine learning	TensorFlow, PyTorch, OpenCV, Keras, Numpy, Pandas, Scikit-learn, NLTK, Scipy, JAX
Databases	MySQL, PostgreSQL, MongoDB
Cloud	AWS
Big Data	Spark
Other Tools	Git, Unix shell, Jupyter
Math	ML Theory, Stats & Prob, Signal Proc., Stochastic Processes, Convex Optimization

OTHER PROJECTS

- Alternative Actor and Co-Star Suggestion Using a Graph Autoencoder Model** Apr. 2021
[Github repo](#)
- Applied graph autoencoder to actor network using Keras in Python, achieving 99.46% accuracy in reconstructing 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 the autoencoder model.
- Optimization Problems** Jul. 2019
[Github repo](#)
- Optimized unconstrained and constrained convex problems using line search, trust region, and log barrier.