# FARAZ KHADIVPOUR

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Mark 
 601 - 11720 103 Ave NW

**♀** Edmonton, Alberta

# **Professional Summary**

Machine Learning Engineer with 3+ years of experience in creating predictive models. Proficient in collecting, cleaning and analysing data using **Python**.

- Expertise in different ML algorithms such as linear and logistic regression, decision tree, KNN, and deep neural networks.
- Highly experienced working with image data and sequential data.
- Experienced in building end to end machine learning pipelines for production using tensorflow extended (TFX) platform.

# **Working Experience**

## Machine Learning Researcher

Computing Science Department, University of Alberta, Alberta Machine Intelligence Institute (Amii)

May 2020 - ongoing

**♀** Edmonton, Alberta

- Proposing a novel interpretable AI method which makes neural networks more understandable to human users.
- Collaborating with computer science researchers to apply our proposed explainable AI method to an ML model of a financial company.
- Analysing the inner workings of the neural networks using Keras and TensorFlow frameworks.
- Working on an explainable machine learning method on image classification tasks and credit card dataset.
- Working on state-of-the-art convolutional neural networks such as ResNet, AlexNet, and VGG.
- Dealing with different image datasets such as ImageNet and Cifar10.
- Designed a human subject study to evaluate our proposed method and analyzed the results using Rstudio.

# Machine Learning Developer

## Mechanical Engineering Department, University of Alberta. (NCBLab))

🛗 Jan 2019 - May 2021

**♀** Edmonton, AB

- Worked as a team member on a project for RWDI consulting firm.
- Designed and developed highly accurate ML models to predict a specific variable in wind tunnels.
- Dealt with geometric data extracted from over 120 constructions.
- Used pyCaret library to develop and evaluate different ML algorithms such as xgboost, ridge and lasso regression.
- Implemented python scripts to extract features from 3D building models in Rhinoceros software.
- Applied data preprocessing and used different dimensionality reduction methods such as PCA and autoencoders.
- Used different methods such as k-fold cross validation and grid search to perform hyper parameter tuning.
- Implemented accurate deep neural networks using Keras and TensorFlow.
- Created charts and plots in jupyter notebook to perform statistical analysis and visualized data using Matplotlib.

#### **Graduate Research Assistant**

#### **Environmental Engineering Department, University of Tehran.**

Han 2016 - Jan 2019

♥ Tehran, Iran

• Thesis: Optimization of the bio energy production from anaerobic digestion, using data mining and machine learning methods.

#### Skills

python
SQL
Tensorflow
TensorFlow Extended (TFX)
Keras
tflearn
Pandas
NumPy
Sklearn
pyCaret
Matplotlib
Plotly
Seaborn

### **Education**

# M.Sc. in Environmental Engineering University of Tehran

**2015 - 2018** 

▼ Tehran, Iran

# B.Sc. in Civil Engineering K.N.Toosi University of Technology

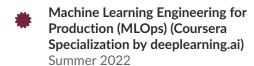
**2010 - 2015** 

▼ Tehran, Iran

## **Publication**

- Responsibility: An Example-based Explainable Al approach via Training Process Inspection (Submitted to AAAI 2023) DOI: arXiv:2209.03433v1
- Khadivpour F, Guzdial M. Explainability via Responsibility. The 2020 Intelligence and Interactive Digital Entertainment (AIIDE) Workshop on Experimental AI in Games (EXAG). DOI: arXiv:2010.01676.

#### **Certificates**



Machine Learning Technician
Certification by Amii
Fall 2020

Deep Learning (Coursera
Specialization by deeplearning.ai)
Summer 2020