FARAZ KHADIVPOUR

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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.

Jan 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 AI 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 Engineering for Production (MLOps) (Coursera Specialization by deeplearning.ai)**
  Summer 2022
- **Machine Learning Technician Certification by Amii**
  Fall 2020
- **Deep Learning (Coursera Specialization by deeplearning.ai)**
  Summer 2020