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 analyzing data using **Python**.

- Expertise in different ML algorithms such as linear and logistic regression, decision tree, KNN, and deep neural networks.
- Highly experienced working on image data and computer vision projects.
- Experienced in building end to end machine learning pipelines for production using TensorFlow Extended (TFX) platform.

Working Experience

Machine Learning Researcher
Scotiabank

📅 Jan 2022 - ongoing 📍 Edmonton, Alberta

- Collaborating with computer science researchers to apply our proposed explainable AI method to an ML model.
- Working on an explainable machine learning method on credit report data.

Machine Learning Researcher
Alberta Machine Intelligence Institute (Amii)

📅 May 2020 - Dec 2021 📍 Edmonton, Alberta

- Proposed a novel exmplainable AI method which makes neural networks more understandable to human users. (Responsibility)
- Analyzed the inner workings of the neural networks using Keras and TensorFlow frameworks.
- applied our proposed method on image classification tasks.
- Worked on state-of-the-art convolutional neural networks such as ResNet, AlexNet, and VGG.
- dealt 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
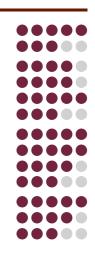**Mechanical Engineering Department, University of Alberta. (NCBLab))**

📅 Jan 2020 - May 2020 📍 Edmonton, AB

- Worked as a team member on a project for RWDI consulting firm.
- Designed and developed highly accurate ML models using Keras and TensorFlow to predict a specific variable in wind tunnels.
- Dealt with geometric data extracted from over 120 constructions.
- 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 pyCaret library to develop and evaluate different ML algorithms such as xgboost, ridge and lasso regression.
- Used different methods such as k-fold cross validation and grid search to perform hyper parameter tuning.
- Created charts and plots in jupyter notebook to perform statistical analysis.

Skills

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

Education

M.Sc. in Computing Science
University of Alberta

📅 Winter 2023 📍 Edmonton, AB

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