# Melika Torabgar

**(780)-722-4490** 

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## **SUMMARY**

- Experienced Machine Learning and data analysis enthusiast in healthcare with over 4 years in academia and industry.
- Passionate about leveraging data-driven insights for innovative solutions.
- Skilled in transforming data insights into actionable business strategies.

## **SKILLS**

#### Technical skills

- Programming: Python, SQL
- Database/Datawarehouse: Snowflake, MySQL, IBM SPSS Statistics
- ML Tools: Scikit-learn, Numpy, Pandas, Scipy, TensorFlow, Matplotlib, Seaborn, plotly, OpenCV
- Other Tools: Microsoft Azure, Git, PowerBI, Streamlit, Docker, Flask, Linux, JIRA, Confluence

# Soft skills

• Communication & Teamwork: Effectively convey project updates to non-technical stakeholders through high-quality presentations.

# **EDUCATION**

## MSc, Rehabilitation Science

Jan 2020 - July 2022

Department of Rehabilitation Medicine, University of Alberta, Edmonton, AB

Thesis: Using **Machine Learning** to identify common engagement-related behaviours demonstrated by **older adults with dementia** While Playing Video Games

# **BSc, Biomedical Engineering**

Sep 2015 - Sep 2019

Department of Engineering, Azad University of Tehran, Iran

Thesis: Femur Simulation with the 3D slicer software

#### WORK EXPERIENCE

# Data Specialist/ Machine Learning Engineer (Permanent - Full time) Origin Electrical LTD.

May 2023 - Feb 2024

#### **Electricity Bill Prediction**

- Implemented ETL pipelines of electrical data from meters for electricity bill prediction model training using Snowflake
- Leveraged Azure Data Lake and Azure AutoML to optimize data management, automate model training and boost project efficiency
- Adopted Facebook Prophet time series ML models to predict electricity usage and bills for the upcoming months
- Deployed bill prediction model for production on the Digital Ocean platform
- Improved Prophet model performance by 30% using feature engineering
- Collaborated with front-end developers to design and illustrate the model performances.
- Technology: Python, SQL, Azure, Scikitlearn, Facebook Prophet, Snowflake, Docker, Flask, Git, Digital Ocean, MySQL, Jira, Confluence

# Associate Machine Learning Developer (Contract - Full time)

Sep 2022 - April 2023

# AltaML Inc.

## Government Building application permit

- Collected and labelled data from different databases for the City of Edmonton building application permit
- Trained models on City of Edmonton permit images using Azure's object detection and Custom Vision, achieving 78% accuracy.
- Optimized the Streamlit dashboard, enhancing government efficiency and saving over \$5 million annually.
- Presented technical training on Exploratory Data Analysis(EDA) to over 30+ associates, and staff at the company
- Technology: Python, Azure, Custom Vision, OpenCV, Streamlit, Git, Pandas, Scikit-learn, Numpy, Matplotlib, Seaborn

## Solar Forecasting

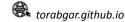
- Processed time-series data from the NASA Power Project
- Developed various Machine Learning models such as XGBoost, Random Forest, and LSTM for solar forecasting
- Applied LSTM model with the highest performance of %82 accuracy and lowered the error to 4% for time-series prediction

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- Stored data and used AutoML on Azure Cloud Services to find the best model for this prediction
- Developed the User Journey, Persona, and ML Canvas for Business Strategies
- Technology: Python, Azure, Git, Pandas, Scikit-learn, Tensorflow, Numpy, Matplotlib, Plotly

Data Analyst Feb 2020 – July 2022

# AGE-WELL Canada's Technology and Aging Network Distinguish Dementia with Machine Learning on Older Adults

- Collected, annotated, and cleaned healthcare data from people with dementia
- Achieved important features for dementia prediction using Random Forest with 91% F1-score
- Identified significantly different behaviours using Chi-squared statistical analysis
- Constructed four different input variables with important features to get the highest recall (93%)
- Technology: Python, Pandas, Scikit-learn, Numpy, Matplotlib, Seaborn

# **Research and Teaching Assistant**

University of Alberta and Islamic Azad University.

Sep 2017 - June 2022

- Screened and reviewed collected data with the Covidence Software for tracking the procedure
- Researched on Measuring Engagement of older adults while Playing Video Games using Machine Learning
- Teaching Assistant in Physiology of Exercise, and Enabling Occupation Through the Use of Assistive Technology
- Technology: MS Office software e.g. Excel, PowerPoint, Covidence

#### CERTIFICATES

- Azure AI fundamentals (AI-900) Microsoft
- Machine Learning Technician Certificate Alberta Machine Intelligence Institute (Amii)
- Machine Learning Foundation 1 & 2 Alberta Machine Intelligence Institute (Amii)
- Python and Machine Learning Udemy
- Ethical Conduct for Research Involving Humans Course on Research Ethics (TCPS2:CORE)

# **HONORS & AWARDS**

•	Amii Machine Learning Technician Scholarship, Alberta	Jan 2022
•	Rehabilitation Medicine Graduate Student Scholarship, University of Alberta	Feb 2021
•	Covid-19 Graduate Student Support Award, University of Alberta	Mar 2021
•	Alberta Graduate Excellence Scholarship (AGES), University of Alberta	Sep 2020

# **PUBLICATIONS & CONFERENCES**

- **Torabgar, M.**, Figeys, M., Esmail, S., Stroulia, E, Rios Rincon, A. The Role of Gaming Behaviours in **Identifying Dementia** Among Older Adults: An Exploratory Study. *JMIR Serious Games Publication.* (Under Review).
- Torabgar, M., Esmail, S., Stroulia, E, Rios Rincon, A. Using Machine Learning to Distinguish Dementia in Older Adults Based on Engagement-Related Behaviours While Playing Video Games. *Reverse EXPO*, Al4 Society, February 18, 2022. Edmonton, Alberta.
- **Torabgar, M.**, Rios Rincon, A. Using artificial intelligence to assess engagement. *Oral presentation at the World Federation of Occupational Therapists (WFOT) conference*. March 27- 30, 2022. Paris, France.
- Torabgar, M., Rios Rincon, A. Do computers know whether older adults are engaged while playing mobile games? Twitter
  presentation at AGE-WELL EPIC Conference 2021 (#AWepic2021). June 10, 2021.