

Melika Torabgar

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SUMMARY

- Experienced **Machine Learning** and **data analysis** enthusiast 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, HTML, CSS
- **Database/Datawarehouse:** Snowflake, MySQL, IBM SPSS Statistics
- **ML:** Scikit-learn, Numpy, Pandas, Scipy, TensorFlow, Matplotlib, Seaborn, plotly, OpenCV, OpenAI, LangChain, LLM, NLP, Spark, Hadoop
- **Developer Tools:** Microsoft Azure, Git, PowerBI, Streamlit, Docker, Flask, Linux, Jira, Confluence,, Postman

Soft skills

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

WORK EXPERIENCE

Machine Learning Engineer (Permanent - Full time)

May 2023 – April 2024

Origin Electrical LTD.

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, 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
- 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 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*

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Research and Teaching Assistant

Sep 2017 – June 2022

University of Alberta and Islamic Azad University.

- 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*

SELECTED PROJECT

AI Receptionist

April 2024

- Created an AI to answer phone calls and assist customers in scheduling appointments using **Bland AI**
- Integrated the **AI agent** call with Google Calendar to check for existing reservations and offer available time slots
- Utilized the **prompted engineering** for concise reply to the client
- Updated/Automated Google Calendar with customers' desired booking date and time, including their information in the calendar event
- *Technology: Generative AI, LangChain, GPT 3.5 Turbo, GPT 4, Bland AI*

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, Computer Science

Sep 2015 – Sep 2019

Department of Engineering, Azad University of Tehran, Iran

Thesis: Femur Simulation with the 3D slicer software

CERTIFICATES

- Unleash the Power of Large Language Models Using **LangChain** - Educative
- **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, AI4 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.*