

# ESMAEIL REZAEI

## Data Scientist, Mathematician, and Engineer

May 2024 Available | Green Card Holder | Dec 2024 Graduate

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### SUMMARY

A talented, passionate and self motivated Data Scientist, Mathematician, and Engineer. Holding M.S. in Data Science, another M.S in Industrial Engineering, and B.S. in Mathematics.

### SKILLS

- **Python** (Scikit-Learn, TensorFlow, Pyspark, Keras, Jupyter)
- **R** (ggplot2, tidyverse)
- **AWS** (SageMaker)
- **Microsoft Power BI** (Dashboard development, App)
- **SQL** (SQL language, MySQL, Erwin)

**Other:** Microsoft Excel • PowerPoint • Matplotlib • Seaborn • Spark • Matlab • Parallel Processing| Familiar C++, Hadoop

**ML Proficiencies:** Time Series • Regression Models • Classification Models • Clustering Models • Hypothesis Testing and Confidence Interval • Principal Component Analysis and Dimensionality Reduction • Optimization • Deep Learning • CNN • CART • XGBoost • Statistics • Probability • Data Mining

### WORK EXPERIENCE

**Graduate Data Scientists, University of Massachusetts, Dartmouth, (Sep 2021 - Present)**

#### Research Assistant

- **US Department of Transportation:** Designed and built a production-ready machine learning algorithm and feature extraction model to develop an advanced driving system for US Department of Transportation. Led to **92% accuracy** of recognition, and coded in Python and tested on a driving simulator (PySpark, Pandas, Matplotlib, Seaborn, Tableau, SAS, SQL).
- **Thesis:** Reduced computational cost of PCA by **78 times** through developing an advanced machine learning algorithm, and evaluated its performance in different scripts (PySpark, scikit-learn, Pandas, Matplotlib, Seaborn).
- **Thesis:** Designed and built a statistical and machine-learning model to solve the scalability issues of big data by developing a predictive **online learning** algorithm which improves by augmentation, applied ADAM optimization (PySpark, OpenCv, pandas, Scipy, Matplotlib, Seaborn).

#### Teaching Assistant

- Tutored 35 students with learning challenges in coding up engineering solutions with Matlab, Python.

**Data Scientists, Behin Tadbir Paradise, (Feb 2020 - Jul 2021)**

- Built **insurance pricing** algorithms for financial services using machine learning (XGBoost, Naive Bayes, Neural Networks), coded in Python, and collaborated with software developers to create the **GUI**, significantly **improved expected revenue**.

**Founder and Manager, SHARIFNEGAR, (Nov 2015 - Aug 2021)**

- Managed a team of 60 in an e-commerce website to sell tutorials in Data Science, Data Analytics, Mathematics, and Industrial Engineering.

### EDUCATION

<b>Doctor of Philosophy</b> in Computational Science and Engineering University of Massachusetts, Dartmouth	Sep 2021 - Dec 2024 GPA 3.94
<b>Master of Science</b> in Data Science University of Massachusetts, Dartmouth	Sep 2021 - May 2024 GPA 4.0
<b>Master of Science</b> in Industrial Engineering (Socio-Economic Engineering option) University of Science and Technology of Mazandaran, Iran	Sep 2013 - Sep 2015 GPA 3.61
<b>Bachelor of Science</b> in Pure Mathematics Velayat University, Iran	Jan 2009 - Jul 2012 GPA 3.05

### PRESENTATIONS

**Handling High-dimensional Data to Predicting Utility Demand for the ComEd Company**

- Technical Title: Handling High-dimensional Data through Basis Reduction via Interactive Decomposition: Application to Smart Meter Big Data
- Conference: ASCE Engineering Mechanics Institute 2022, Georgia Tech, Atlanta, GA

**A Super Fast Dimensional Reduction Algorithm for Big Data**

- Technical Title: HYBRID: HYper-reduced Basis Reduction via Interactive Decomposition
- Conference: ASCE Engineering Mechanics Institute 2022, Johns Hopkins University, Baltimore, MD