Mitra Mansouri | Curriculum Vitae

Ottawa, ON, Canada

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Objective

Dedicated mathematician and statistician with 5+ years of experience in analyzing complex data and delivering impactful insights through advanced analytics and visualization. Skilled in Python, SQL, and R, with a strong commitment to leveraging data for strategic decision making. Seeking opportunities to contribute to innovative, data-driven projects in a collaborative environment.

Summary of Qualifications

- PhD in Mathematics and Statistics.
- Proficient in data cleaning, visualization, reporting, and presentation.
- Applied data analysis skills across diverse industries (Healthcare, Banking, Civil Engineering).
- Created and maintained complex Python, SQL, and R codes for analysis and reporting.
- Experience in large-scale data computations with the Digital Research Alliance of Canada.
- **Technical Skills:** Python, R, SQL, C, MATLAB, LaTeX, SageMath, GAP.
- **Machine Learning:** NLP, Regression, KNN, Decision Trees, SVM, CNN, Naive Bayes.
- **Python Libraries:** sklearn, nltk, seaborn, numpy, pandas, TensorFlow, Keras, NetworkX.
- **Tools:** Git, Jupyter Notebook, Power BI, Microsoft Office.

Honors and Awards

- International Doctoral Scholarship (100,000 CAD), University of Ottawa, 2019-2023.
- Admission Scholarship-Doctorate (about 36,000 CAD), University of Ottawa, 2021-2023.
- CUPE UOttawa Scholarship (TA Scholarship), 2021-2024.
- Total amount of travel grants for participating and talk in conferences (about 5000 CAD).

Professional Experience

- **Part-time Professor (University Instructor)** **Sep 2023-Present**
  University of Ottawa, Ottawa, Canada
  - Coordinated and delivered engaging lectures on Calculus, and Linear Algebra to over 300 students, using adaptive teaching methods. Managed assessments via Mobius, while enhancing course content and providing additional support for diverse student needs.
- **Research Assistant** **Sep 2019 - Dec 2024**
  University of Ottawa
  Supervisor: ***Hadi Salmasian***
  - **Mathematical research** on extending the theory of spherical functions to the realm of supersetting.
  - Recent advances in geometric deep learning and graph neural networks involve spherical harmonics for representing functions on curved spaces.
- **Market and Data Analyst (Selected Projects)** **Jan 2022 - Dec 2024**
  University of Ottawa
  - **Breast Cancer Diagnostic and its deployment:** The features in this dataset are computed from a digitized image of a fine needle aspirate (FNA) of a breast mass. These features describe the characteristics of the cell nuclei present in the image. the model used are Deep learning, Support Vector Machine, Ensemble Voting classifier.
  - **Analyzes customer complaints to identify issues across products and bank services**. It includes

exploratory data analysis (EDA) and categorizes complaints using natural language processing (NLP) techniques. A BI-LSTM neural network is used to classify complaints based on their content.

- **Concrete Strength Prediction:** Developed predictive models using KNN, Random Forest, and XGBoost to forecast concrete strength based on key mix parameters. Applied feature engineering and model evaluation techniques for civil engineering applications.
- **Clustering Housing Data Using K-Means This project uses K-means clustering** to segment housing data by attributes such as median income, longitude, and latitude. It includes analysis using the elbow method for optimal k and evaluation of cluster quality with the Silhouette Coefficient. The objective is to identify distinct economic regions.
- **Neural Networks** Developed and trained neural networks for handwritten digit recognition using the MNIST dataset. Optimized model architecture for improved accuracy and computational efficiency.

Teaching Assistant **Sep 2019 - Aug 2024**
University of Ottawa, Ottawa

- Led discussion groups and problem solving sessions for math courses. Provided one-on-one assistance in the Math Help Center.

Data Analyst **Jan 2018 - Aug 2019**
Puya Tarh Aseman, Tehran, Iran

- Led data collection and analysis projects for high-profile clients, including Knauf and Golrang, focusing on actionable insights to drive business decisions.
- Utilized statistical and predictive modeling techniques to optimize marketing strategies, significantly improving targeting and customer engagement across 70+ brands.
- Leveraged data-driven approaches to enhance profitability, applying analysis to inform strategic adjustments in the FMCG sector.

Volunteering as an organizer for the "Math Horizons Day" event **April 2023**
University of Ottawa, Ottawa

Education

PhD in Mathematics and Statistics **Sep 2019 - Dec 2024**
University of Ottawa, Canada

MSc in Mathematics and Statistics **Sep 2012 – Sep 2014**
Amirkabir University of Technology

BSc in Mathematics **Sep 2008 – Sep 2012**
Shahrekord University

Certificates

- Microprogram in Interdisciplinary AI, University of Ottawa, 2023-2024.
- Foundations of Machine Learning for Scientists and Engineers, University of Ottawa, 2024.
- Supervised Machine Learning Regression and Classification, Coursera, 2022.
- Python for Data Analysis, Udemy, 2023.

Selected Conferences Talks

University of British Columbia - Okanagan(UBCO), Kelowna, Canada **July 2024**
workshop 24w5220 BIRS-UBCO

Instituto de Matemáticas, UNAM, Mexico City **June 2024**
Canada–Mexico–US Conference in Representation Theory

Université de Montréal, Canada **August 2023**
Canada–Mexico–US Conference in Representation Theory, (Poster presentation)