

# Sahel Eskandar, Ph.D., M.Sc., B.Sc.

## Data Scientist | Machine Learning Engineer

📞 (905) 519-9868 | 📍 Toronto, ON | ✉️ [eskandar.sahel@gmail.com](mailto:eskandar.sahel@gmail.com) | in [Sahel-Eskandar](#) | GitHub [Sahel-Eskandar](#)

Machine Learning Scientist with **6+ yrs.** of blended industrial and academic experience. More than **10+ yrs.** of data analysis and statistical analysis experience. Problem solver with expertise in designing data-driven applications. Seeking a challenging environment and problems to solve and grow within a team.

### Skills

- **Tools:** Python, R, SQL, Git, AWS
- **Packages:** NumPy, SciPy, Pandas, TensorFlow, Scikit-Learn, Matplotlib
- **Data Structure:** Array and String, Binary Tree, Hash Table, Queue and Stacks, Linked List, Heap
- **Data Analysis:** Feature Engineering, Data Wrangling, Exploratory Data Analysis (EDA)
- **Machine Learning:** Linear/Logistic Regression, Classification, k-means Clustering, k-Nearest Neighbors kNN, SVM, Decision Trees, Random Forest, PCA, Gradient Boosting Algorithms
- **Deep Learning:** Anomaly Detection, Pattern Recognition, RNN, LSTM, Image Processing, Convolutional Neural Networks (CNN), Autoencoders, Natural Language Processing (NLP)

### Professional Experience

- Dec '22  
Jan '19 **Research Assistant** at MITL- McMaster Institute for Transportation and Logistics
- Data Preprocessing (noise reduction, alignment, rebalancing, encoding) & **Exploratory Data Analysis**
  - ML algorithms design and implementation (**Ensemble Learning, kNN, Gradient Boosting, Decision Trees, and Naive Bayes**)
  - Effectively advanced a multiclass classification model; increased accuracy by **12%** (0.98 F1 scores)
  - Successfully developed unsupervised **Anomaly Detection** using **TensorFlow** to predict multivariant time series instant anomalies within **1.25 sec**
  - Established a supervised data-driven classification approach using adaptive neuro-fuzzy inference systems resulting in lower redundancy and **16 times faster** processing
  - Data collection design, implementation, and integration from multiple sensors
- Nov '18  
Nov '16 **Data Scientist** at Tecnosa Research and Development Center
- Collaborated with stakeholders to identify the business problems
  - Industrialized tools to extract information from Autodesk caused **30% less** time to prepare a report
  - Extracted insights and improved tracking progress via **Python** and **SQL**
  - The synchronized system resulted in **5x faster** data management and **50% fewer** assigned resources
- Oct '16  
Feb '16 **Project Management Analyst** at Magma Construction Company
- Monitored project progress against plan & controlled project budget
  - Collaborate on the preparation of project proposals
- Dec '15  
Apr '14 **Project Lead** at Tehran Institute of Space Frame
- Feasibility study of composite space structures
  - Directed an investigation of the composite space superstructures in highway bridges
- Apr '14  
Dec '13 **Design Engineer** at TSP Consulting Engineer

### Education

- Ph.D. **Doctorate in Engineering / Machine Learning** at McMaster University  
Specialize in Deep Learning and Applications, Neural Networks and Development Tools, Combinatorial Optimization, Systems Engineering, Multivariate Statistical Models and Data Processing Methods
- M.Sc.  
B.Sc. **Master's in Engineering and Management** at University of Tehran  
**Bachelor's in Engineering** at University of Tehran

### Certifications

- Nov '22 Google Cloud Digital Leader Training ([Certificate](#))  
Introduction to Digital Transformation with Google Cloud ([Certificate](#))  
Innovating with Data and Google Cloud ([Certificate](#))  
Infrastructure and Application Modernization with Google Cloud ([Certificate](#))  
Understanding Google Cloud Security and Operations ([Certificate](#))
- May '22 Applied Data Science with Python Specialization, University of Michigan ([Certificate](#))  
Statistics Foundations, LinkedIn, *Certificate Id: AUmeYZQHcdFWfI21-x3udg3IF8-w*

Mar '22 Convolutional Neural Networks, Stanford University  
 Apr '20 Data Analytics, LinkedIn, *Certificate Id: Adtoe2h0CoElmFGAsYNcKZHDrQiI*  
 Mar '20 Machine Learning Onramp, MathWorks Training Services  
 Jan '20 Machine Learning and Deep Learning, Stanford University ([Certificate](#))  
 Oct'19 Revit, LinkedIn, *Certificate Id: AXnpEIYyUKBp-ucteHOW8q6Jzlz7*  
 Revit 2017 Essential Training *Certificate Id: AcdSXwrz93dMmisuUXUu81YVVRQe*  
 Sep'19 Microsoft Project Certification, Microsoft  
 Jul'17 Professional Engineer PE, Iran Construction Engineering Organization (IRCEO)

---

## Publication

Dec '22 **Toward Occupational Stress Detection: Anomaly Detection Using Unsupervised Deep Learning** submitted to International Journal of Occupational Safety and Ergonomics  
 Dec '22 **Stress Detection Using Adaptive Neuro-Fuzzy Inference System: Toward Automation in Construction Safety** submitted to Automation in Construction  
 Oct '20 **Using Deep Learning for Assessment of Workers' Stress and Overload**, The International Association for Automation and Robotics in Construction  
 Sep '19 **Human-in-the-Loop Cyber-Physical Systems for Construction Safety**, Cyber-Physical Systems in the Built Environment. Springer, P161-173, 2019  
 Mar '18 **Feasibility of Particle Swarm Optimization and Multiple Regression for the Prediction of an Environmental Issue of Mine Blasting**, Engineering Computations, Volume 35, Issue 1, 2018  
 Nov '17 **The Potential Application of Particle Swarm Optimization Algorithm for Forecasting the Air-Overpressure Induced by Mine Blasting**, Engineering with Computers, Volume 34, 2017  
 Oct '15 **Determine the Parameters Affecting the Original Estimated Costs of Building Construction Projects in the Pre-Design Stage**, Iran National Conference  
 May '15 **A Study on the Seismic Behaviour of Medium Span Bridges Using Composite Double-Layer Grid Superstructure**, Iran National Congress  
 Oct '11 **Investigation of Procedural Factors and Mixing Conditions on Mechanical Properties of Very High-Performance Concrete**, Iran National Conference

---

## Honours/ Awards

May '18 Granted Research Scholarship, McMaster University  
 May '18 Awarded Graduate Scholarship, McMaster University  
 May '13 Granted exemption from graduate level entrance exam for master program  
 May '12 Ranked among the top 10 percent, Civil Engineering, University of Tehran  
 Dec '09 Received Exceptional Talent Scholarship from Faculty of Engineering, University of Tehran  
 Aug '09 Ranked top 1 percent in Iran's mathematic nationwide entrance exam