

Parham Moradi



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LinkedIn



GitHub



Portfolio

SKILLS

Programming & Frameworks: Python, SQL, TensorFlow, scikit-learn, PyTorch, Pandas, Seaborn

Data & AI Techniques: Transformers, NLP, Chunking, RL, Optimization, Data Modeling, Predictive AI

Tools & Technologies: Looker, Tableau, Power BI, Langchain, Flask, Heroku, Docker, Kubernetes, SQLite

Operating Systems and subsystems: Ubuntu, WSL, Windows

A strategic problem-solver who excels at translating mathematical concepts into practical solutions.

EDUCATION

MASc Management and Data Sciences

University of Waterloo

Waterloo, Canada

Sept.2021 - Feb.2024

BSc Computer Science and B.Sc. Electrical Engineering

Sharif University of Tech

Tehran, Iran

Sept.2016 - Sept.2021

EXPERIENCES

Data Scientist

Research Assistant

University of Waterloo (2021-2024)

Project Showcase

- Collaborated with **15 Canadian hospitals** to **optimize healthcare data workflows**.
- Worked as part of three cross-functional teams to deliver results at weekly meetings.
- Defined the goal of improving patient scheduling performance and discussed the hospitals objective, which led to **data-driven modeling**.
- On 15 Historical Data Sets (with **50 features** and **25,000 records**) applied **preprocessing** methods for the data analysis preparation.
- Conducted **quantitative analysis** using **causal inferences**, **statistical analysis**, **hypothesis testing**, **A/B testing**, **simulation analysis**, and **sensitivity analysis** to drive optimized data-driven decisions.
- Developed and implemented **AI/ML models**, including **predictive modeling**, **generative AI**, **optimization algorithms**, and **reinforcement learning** techniques for improving the decision-making performance.
- Analyzed Datasets by Python libraries such as **NumPy** and **Pandas** for data manipulation, and **PyTorch** for deep learning model development.
- By **exploratory data analysis (EDA)** uncovered **hidden patterns** in long waiting times and queue bottlenecks.
- Designed and managed **relational databases** using **MySQL** and **SQLite**.
- Using **counter factual analysis** and **generative AI** suggested better decisions that optimized hospital workflow processes, reducing total patient **waiting times by 30%** and improving decision-making **performance by 70%** through data-driven strategies.
- Used **Power BI**, **Matplotlib**, and **Seaborn** for visualizing findings and performance metrics.
- At each step, translated mathematical concepts into actionable insights for non-technical stockholders.

Data Analytics (Intern)

R&D team

RastakMS

- Conducted research and analysis of **demand planning** and **probability of default** for the **carchain project**, leading to actionable insights for scalability improvements.
- Used **Fraud Analytics** and identified security vulnerabilities in the Carchain project such as Data availability attacks.

Scheduling: Theory and Practice

TA at University of Waterloo

- Covered scheduling problems found in industry, algorithmic, heuristic, and mathematical programming solution approaches.
- Conducted tutorials, labs, and evaluated projects.

PROJECTS

Data-Driven Patient Scheduling with AI and RL

Master's Thesis

University of Waterloo

- Built the **optimized quantitative** patient scheduling model.
- Checked the robustness of the algorithm using **sensitivity analysis**.
- Analyzed Canadian hospitals' datasets and estimated decision-making policies using **Python**, with data processed in JSON and CSV formats.
- Built a **predictive AI-based** patient scheduler to **test hypotheses** using **A/B testing method**, improving the total waiting times by 30%.
- Used **Mathematical Optimization, Reinforcement Learning (RL)** and **Pandas** to improve decision-making performance by 70%.

DeepSeek API chatbot on my personal portfolio website

[Website](#)

- Deployed a **DeepSeek API** chatbot into my personal website to answer questions about my background.
- Developed with **Flask** and **Heroku** for seamless scalability.
- Used **Langchain** for processing pipelines and **Transformers** for **NLP**.
- Optimized similarity search with **Faiss** and deployed via **Hf Transfer**.

Building a Scalable Machine Learning API

[GitHub](#)

- Built a user-friendly **ML API** that enables non-expert users to **upload datasets, train models, save best-performing models, and receive predictions and evaluation scores**.
- Saved the best-performing model to **SQLite database**.
- Validated endpoints using **Postman and cURL**.
- **Dockerfile** ensures seamless local deployment.
- Developed **Kubernetes** deployment and service YAML files.
- Deployed the app locally using **Minikube**.
- README.md with Docker setup instructions, API usage examples, **CI/CD pipeline guidance**, and Terraform deployment details.

COURSEWORK

Machine Learning with Python

[IBM Certificate](#)

- Linear and Logistic Regression, Sigmoid Function, Gradient Descent, SVM, Snap ML, Grid Search, Clustering and K-Means.
- Used Python Libraries such as TensorFlow, PyTorch, and Pandas.

University Coursework

[Waterloo & Sharif University](#)

- Completed courses in Machine Learning, Artificial Intelligence, and Big Data Analytics.
- Quantitative analysis and forecasting, NLP, decision trees, gradient descent, neural networks, and deep learning were covered