Amir Hossein Karimi

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SUMMARY

Senior Data Scientist with 7+ years of experience in leveraging machine learning, predictive modeling, and optimization techniques to enhance supply chain operations, Logistics planning, production planning, and KPI optimization. Proven track record of deploying models to drive data-driven decision-making, optimize operational efficiency, and reduce costs. Skilled in collaborating with cross-functional teams to implement tailored analytics solutions.

WORK EXPERIENCE

Data Scientist Consultant **Feb 2023 - Present**

Upwork Talent Network - Washington DC

- Utilized K-Means and DBSCAN clustering techniques to analyze customer behavior and preferences, enabling personalized ad recommendations based on factors such as recent views, locations, and visit frequency using collaborative filtering algorithms. This approach led to enhanced customer satisfaction and a 10% reduction in customer churn rate.
- Analyzed and visualized complex sales data using Python libraries for EDA (e.g., Pandas, NumPy, Matplotlib) and Azure Databricks to identify trends, uncover actionable insights, and optimize pricing strategies, leading to a 15% increase in revenue and enhanced data-driven decision-making.
- Developed a customer churn prediction model using logistic regression and feature selection techniques, identifying key risk factors and improving customer retention by 15%.

Lead Data Scientist - Operational Researcher **May 2020 - Dec 2022**

Alamout Tavan Construction Co. - Tehran, Iran

- Developed Python programs utilizing ARIMA model for price forecasting and risk management using Azure Databricks, achieving 90% accuracy and contributing to a 20% cost savings in procurement and staffing.
- Utilized data-driven operations research techniques, such as queueing theory and simulation modeling, in Azure Databricks to optimize construction site logistics, resulting in a 20% reduction in equipment idle time, a 15% increase in labor productivity, and enhanced collaboration with cross-functional teams.
- Implemented Dynamic Programming and scheduling methods, enhancing resource and workforce allocation and boosting profit margin by 25% within 6 months.
- Monitored project progress and performance using real-time data analytics, providing stakeholders with actionable insights for optimal workflow management.
- Led and mentored a team of junior analysts, fostering a collaborative environment and promoting individual growth in data-driven problem-solving and decision-making.

Data Scientist - Supply Chain **Dec 2019 - May 2020**

Daroupakhsh Pharmaceuticals - Tehran, Iran

- IImplemented linear programming and optimization techniques using Python libraries like SciPy, PuLP, and Azure Databricks to streamline production processes, resulting in a 30% increase in inventory turnover, a 20% decrease in lead times, and a 15% reduction in operating expenses.
- Developed predictive risk models using Stochastic and Dynamic Programming, along with Python libraries like Pyomo and Statsmodels, to optimize inventory management for a 100k-record dataset, leading to a 15% reduction in stockouts and a 20% improvement in operational efficiency.
- Utilized Markov Chain Monte Carlo simulation and statistical modeling techniques with libraries such as NumPy, SciPy, and PyMC3 to build accurate operation cost estimation models. Achieved a 35% reduction in cost estimation errors, enabling better budgeting and resource allocation.

Data Scientist - Optimization Specialist **Sep 2017 - Dec 2018**

Snapp Shared Mobility System - Tehran, Iran

- Collaborated with the marketing team to optimize campaign targeting using A/B testing and multi-variate analysis with Azure Databricks, resulting in a 20% increase in conversion rate and generating an additional $1 million in revenue.
- Developed and implemented a dynamic network optimization model using linear programming, network flow algorithms, and reinforcement learning techniques in Azure Databricks to streamline ride-sharing operations, resulting in a 20% reduction in transportation costs, a 10% decrease in average wait times for riders, a 30% increase in driver utilization, and enhanced collaboration with cross-functional teams.

TECHNICAL SKILLS

Languages and Frameworks:
- Python, R, MATLAB, C++, SQL , SAS

Data Science Libraries and Tools:
- Pandas, NumPy, SciPy, Scikit-Learn, TensorFlow
- PyTorch, Keras, Statsmodels, ggplot2, Matplotlib

Machine Learning and Statistics:
- A/B Testing, Classification, Clustering
- Covariance and Correlation Modeling, EDA, Forecasting
- Hypothesis Testing, Monte Carlo Simulations
- Principal Component Analysis, Regression Modeling
- Risk Analysis, Statistical Experiment Design, Time-Series Analysis

Decision-Making:
- Dynamic Programming, Linear and Nonlinear Programming
- Heuristic and Metaheuristic Optimization Methods, KPI Optimization
- Mathematical Optimization, Operations Research, Stochastic Programming
- Integer Programming, Mixed Integer Programming, Convex Programming

Cloud and Databases:
- Amazon Web Services (AWS), Azure ML, Databricks, Oracle
- Relational Databases, Snowflake

Optimization and Simulation Tools:
- CPLEX, Gurobi, SIMIO

Reporting Tools:
- Power BI, Tableau, Google Data Studio, QlikView

Supply Chain and Logistics:
- SAP, Oracle, SIMIO, AnyLogic, AnyLogistix, Logistics Planning

Project Management Tools:
- Microsoft Project, Jira

Other Tools and Technologies:
- Bash/Shell Programming, Cloud Technologies, Visual Basic, Microsoft Office Suite

EDUCATION

North Carolina State University **Jan 2016 - May 2017**

Master of Science in Operations Research

Developed a deep understanding of statistics, stochastic programming, Mathematical optimization, AI, and machine learning through coursework and independent projects

University of Tehran **Sep 2011 - Sep 2015**

Bachelor Of Science in Engineering Science / Computational Science

Prioritized learning the fundamentals of computational tools and data analytics. Graduated with distinction, earning the Dean's List recognition.