Monica **Music**

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Summary

With a Ph.D. in data science and more than five years of working in data science and analytical roles, I have significant experience in creating actionable insights and data-driven solutions through research, experimentation, data analysis, and developing advanced analytical and machine learning models. I collaborated with different teams and managed cross- functional projects to provide innovative solutions to challenging problems and advise executives on operations, product, marketing, and customer experience strategies.

Work Experience

Data Scientist
06/2022 – Present

Apple — San Francisco

Data Scientist
08/2021 – 05/2022

iRobot — Boston

Developing data mining solutions to create practical insights for optimizing Direct-to-Customer plans and activities. Improving product quality by analyzing customer and product data to identify issues and improvement areas. Built a 52% more accurate demand and sales forecasting model through better model selection and feature engineering. Producing dashboards and Decision Support Systems to help stakeholders in data-driven decision-making

Graduate Research Assistant
09/2016 – 08/2021

UMass Boston College of Management — Boston

I design experiments, conduct exploratory data analysis, apply statistical methods, and develop Machine Learning models to study behaviors and gain practical insights of value in a business context. Built an ML pipeline to predict review effectiveness through personalization and feature engineering with NLP (Python). Applied NLP to extract new features through sentiment analysis and topic modeling (NLTK & Gensim). Developed XGBoost, Random Forest, and Poisson Regression models to predict customers decision. Developed and enhanced time series and RNN models of sequential human decisions through behavioral modeling (Python). Built and tuned ARIMA and LSTM models using new behavioral features and improved prediction RMSE by 5.8% (statsmodels & sklearn & keras). Developed a stock market portfolio recommender model using cluster analysis and association rule mining (R & SQL).

Quantitative Methods Fellow
08/2020 – 05/2021

Babson College — Wellesley

Teaching courses in Quantitative Methods, Business Analytics, Data Mining, and Statistical Learning

Data Science Intern
07/2020 – 01/2021

Plymouth Rock Assurance — Boston

I was using the company's big data to build advanced analytical solutions and Machine Learning models to improve the predictive performance of the risk and pricing models. Improved performance of the XGBoost model for price & risk prediction through feature engineering (Python, SAS). Decreased unmatched customer records by 42% by performing entity resolution (Python, SQL, SAS)

Master Thesis Writer
01/2013 – 06/2013

Trigo — Oslo

Used Keras and YOLO in embedded systems to do object recognition in rounabouts. The results were sent to GCP where they where further analyzed with high dimension classifiers.

Education

Doctor of Philosophy (Ph.D.), Information Systems for Data Science (STEM)
12/2016 – 12/2021

University of Massachusetts Boston — Boston

Bachelor of Science - BS, Mechanical Engineering
12/2005 – 12/2009

Sharif University of Technology — Sharif

Projects

Suppliers Learning: Aggregate and Individual Levels
05/2021 – 01/2022

Role of interaction quality and trust in use of AI-based voice-assistant systems
05/2021 – 01/2022

Certifications

Neural Networks and Deep Learning
06/2022

Triplebyte Certified Data Scientist
08/2019