Ali Zamani

ML Engineer @ Priceline (Booking Holding)

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Highlights

- Experienced Data Scientist, Data Engineer, ML Engineer, and Chatbot Developer with over 3 years of research and industrial experience in Generative AI, linguistics, sentiment analysis, intent detection, entity extraction, text classification, and image processing.
- Developed robust ML pipelines for diverse applications, including Mean Grain Size (MGS) estimation on Azure and a mental health chatbot (**mymira.ca**), demonstrating strong skills in model development, data analysis, and error reduction.
- Led critical projects, such as the migration of Oracle to Google Cloud Platform with comprehensive ETL pipeline development, and the design of a Generative AI CI/CD pipeline for automated hotel review summaries, enhancing data processing and deployment efficiency.
- Collaborated effectively with multidisciplinary teams, including healthcare professionals, students, and industry leaders like Pfister and Suncor, showcasing excellent communication and teamwork skills.

Relevant Work Experience

ML Engineer (Full-Time) Apr. 2023 - Present
Priceline (Booking Holdings), Toronto, ON

- Built a standardized ML pipeline with feature store and modular training components.
- Created an Airflow DAG to orchestrate data prep, training, deployment, and versioning.
- Designed a scalable GenAI framework on GCP for various GenAI use-cases with CI/CD.
- Led Oracle to GCP migration with ETL pipelines, improving data access for ML workflows.

Machine Learning Developer (Contract Position) Sept. 2022 - Dec. 2022
AltaML, Calgary, AB

- Built a complete ML pipeline on Azure for rock permeability prediction using LightGBM and XGBoost, achieving 94% accuracy.
- Applied error analysis techniques to improve signal quality and model robustness in production scenarios.

Data Scientist and Chatbot Developer (MIRA Chatbot -) Jan. 2021 – Sept. 2022
Department of Computing Science, University of Alberta and Amii, Edmonton, AB

- Engineered and deployed both the back-end and front-end of the MIRA chatbot (mymira.ca), enhancing user interaction through advanced NLP techniques.
- Achieved **97%** F1-score for intent detection and **83%** for entity extraction using RNN models.
- Utilized data augmentation techniques, such as back translation and synonym replacement, to enrich the training dataset for the MIRA chatbot.

Education

M.Sc. in Computer Science Jan. 2021 – Aug. 2022
University of Alberta, under the supervision of *Dr. Osmar R. Zaiane* *Edmonton, AB, Canada*

M.Sc. in Computer Engineering Sep. 2017 – Sep. 2020
Amirkabir University of Technology *Tehran, Iran*

B.Sc. in Electrical Engineering Sep. 2013 – Sep. 2017
Kashan University *Isfahan, Iran*

Technical & Soft Skills

Programming: Python, C++, C, MATLAB, PHP, HTML/CSS, JavaScript
NLP: NLTK, Spacy, Gensim, Hugging Face, Stanza
Libraries: Tensorflow, Pytorch, Keras, Sklearn, Numpy, Scipy, Pandas, React
Tools: GCP, Azure ML Studio, Linux, Git, Spark, Flink, Docker, NGINX, Jira
Database: SQL, MySQL, Microsoft SQL Server, SQLite, PostgreSQL, BigQuery
Frameworks: Rasa, Laravel, Django, Flask
Visualizations: Tableau, Matplotlib, Seaborn, Plotly, LIME
Software Skills: Communication, Teamwork, Leadership, Work Ethic, Time Management, Creativity

Selected Projects

Priceline Hackathon (Placed 1st and 3rd in Consecutive Years)

- Neighborhood Recommendation System: Leveraged vector embeddings to suggest neighborhoods to users based on their preferences, enhancing personalized travel experiences.
- Travel Assistance Chatbot: Developed a chatbot using GPT-4 to assist customers in finding their desired travel destinations, significantly improving user engagement and satisfaction.

Ml-Pipeline Template

- Developed an ML pipeline template to create a user friendly utility to drastically speed up the development and implementation of a machine learning model for all sorts of various problems.

Microsoft and AltaML Hackathon

- Burnout Detection System: Built an ML pipeline on Azure to detect burnout among call center agents, utilizing a pre-trained transformer-based model (BERT) for accurate sentiment analysis and stress detection.

Kaggle Competitions

- Sarcasm Detection and Fake Disaster News Classification: Achieved over 85% accuracy in sarcasm detection and over 90% in fake disaster news classification.

Commonsense Validation and Explanation

- Common Sense Validation and Explanation: High performance in Common Sense Validation and Explanation tasks using BERT & RoBERTa.

Grammar Checker

- Grammar Correction Tool: Created a grammar checker using context-free grammar (CFG) and constituency parsing, providing automated grammar correction for improved text quality.

Parallel Computing

- Parallel ML Algorithms: Developed parallel versions of basic ML algorithms such as Naive Bayes and Logistic Regression, optimizing computational efficiency and processing speed.

Selected Publications

Developing and Implementing a Mental Health Chatbot to Support Healthcare Workers
2021, A.Zamani, M.Gharayat, J.Nobel, O.Zaiane, E.Stroulia – REMAP-D, Vancouver, British Columbia, Canada

Selected Certificates

- Azure Fundamentals - AZ-900
- IBM Data Science (IBM Skills Network)
- Natural Language Processing (Deeplearning.ai on Coursera)
- Machine Learning (Stanford University on Coursera)
- Foundation of Project Management (Google on Coursera)