

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

Data Developer and ML Engineer (Full-Time)

Apr. 2023 - Present

Priceline (Booking Holdings), Toronto, ON

- Supported the Penny Chatbot using **Vector RAG**, enhancing customer interactions.
- Led Oracle to Google Cloud Platform migration with **ETL pipeline**, ensuring data integrity.
- Implemented a scalable CI/CD pipeline for **Generative AI** applications on GCP.

Machine Learning Developer (Contract Position)

Sept. 2022 - Dec. 2022

AltaML, Calgary, AB

- Implemented a **LightGBM** and **XGBoost** algorithm for predicting the permeability of rock core images with an accuracy of **94%**, saving upwards of 10 million dollars for the client.
- Developed a Machine Learning pipeline from scratch on **Azure** and conducted error analysis to further improve the model performance.

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.
- Applied sentiment analysis to improve user experience.

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, WordPress, Ns-3 simulator, 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)