

DANIAL EBRAT

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HIGHLIGHTS

- AI specialist with over a decade of experience in 3 different companies with a successful history of participation and leadership in developing over 10 nationwide, large-scale software systems as an AI and ML Engineer, Data scientist, and project leader, leading to multiple innovative patents.
- Passion for learning new technologies and facing new challenges, especially in interdisciplinary projects, leading to the collaboration and teamwork of diverse experts from different backgrounds.
- Proficient in digital signal processing (Speech, audio, music), recommendation systems, Time series and sequential data, Large language models, Agentic AI, and knowledge graphs.
- Proficient in coding, debugging, designing algorithms, and creating and deploying AI models and pipelines in various interdisciplinary industrial projects with agile and scrum methodologies.
- Great attention to detail with organizational and interpersonal skills.
- Problem solver, analytical, and critical thinker with excellent presentation skills.
- Ability to work independently, in a team, and lead projects under pressure to meet deadlines.

SKILLS

- **Programming language:** Python | SCALA | SQL | Cypher
- **Libraries:** TensorFlow | Keras | PyTorch | Streamlit | Scikit-learn | PySpark | RLLib | LangChain | LangGraph | Ollama | Openai
- **Databases and Big Data:** MySQL | PostgreSQL | MongoDB | Apache Spark | Neo4j | AWS S3 | Snowflake
- **Cloud computing platforms:** Amazon Web Service (AWS) | Google Cloud Platform (GCP) | Azure ML | Databricks | Hugging Face | Hex
- **Development and Management:** PyCharm | IntelliJ | Jupyter | Colab | GitHub | Bitbucket | Jira | Power BI
- **Programming Paradigms and Concepts:** OOP | SOLID | Clean Code
- **AI:** ML/DL algorithms | Predictive and generative Models | Supervised and unsupervised learning | model evaluation | feature engineering | Decision Analytics | Audio, speech and music signal processing | ML Pipelines | Large Language Models (LLM) | Prompt engineering | Deep Reinforcement Learning | RAG (Retrieval-Augmented Generation) | knowledge graphs and GNNs | Agentic AI

familiar with C#, C++, Java, and front-end technologies (HTML, CSS, Django, Flask, WordPress)

EXPERIENCE

Machine Learning Engineer | *Musora Media Inc., Canada*

Aug 2023 – Present

- Designed and implemented multiple fully automated hybrid recommender systems for online music education platforms, using cutting-edge approaches and cloud-based deployment based on content-based, collaborative filtering, RAGs, vector embeddings, and Graph-based approaches.
- Created automated pipelines to annotate contents, transcriptions, and perform sentiment analysis using LLMs APIs, whisper API, and prompt engineering to extract auto-generated tags related to videos and audio contents.

- Created an AI Virtual Assistant using GraphRAG technology, complementing Neo4j, knowledge graphs, Agentic LLMs, and LangChain to recommend content, playlists, and learning paths for music students.
- Created an internal AI-generated personalized push notification messaging system for the marketing team that improved 40% CTR engagement using Agentic AI, multiple LLM APIs, prompt engineering, and prompt design.
- Created an AI analytical tool as an LLM wrapper around key databases, enabling stakeholders to extract insights, knowledge, and visualizations using natural language prompts and PandasAI.

Artificial Intelligence Instructor | *Canada Super Spelling Bee, Canada*

Feb 2023 – Sep 2023

- Teaching Artificial Intelligence, Data Science, and machine learning using hands-on Python projects.
- Teaching programming and algorithms for coding contests of the United States of America Computing Olympiad (USACO) and Canadian Computing Competition (CCC).

Research Assistant | *University of Windsor, Canada*

Sep 2022 – Present

- Conducted extensive research on applying multi-agent deep reinforcement learning in recommender systems, utilizing advanced customized simulation environments, LLMs, Vector embeddings, and Graph Neural networks.
- Led a patent project involving the development of an Intelligent Framework for a Social Engineering Cyber Security Training program. This innovative AI-based system dynamically adjusted its behavior based on user responses, identifying vulnerable individuals and their weaknesses in relation to social engineering attacks.
- Research on the application of large language models in recommender systems led to the publication of 3 key papers in leading conferences such as Canadian AI, ICMI, and KDD workshops.

Artificial Intelligence Engineer | *ARAD Company, Iran*

Jun 2021 – Aug 2022

- Design and development of the back end of an analytics platform application that enables quick integration and fast analysis of vast amounts of complex data from the hybrid graphs and relational databases using SCALA, Apache Spark, MongoDB, Apache Livy, and Apache Sedona running on GPU clusters.
- Implementation and deployment of various deep learning and machine learning models for +5 projects related to the aerospace industries, such as anomaly detection, trajectory prediction, super-resolution radars, decision-making, and radar fusion, which led to multiple innovative patents.
- Designing the conceptual architecture for a complex supply chain network associated with the Ministry of Agriculture and Livestock to automate the food industry of Iran.
- Research and development, data engineering, data collection and analysis, data mining, and data visualization resulted in +10 national and prospective projects worth millions of dollars.
- Provided mentorship to junior developers and interns by leading real-world projects and delivering instructional lectures. Developed curricula, created project plans, and guided to ensure the successful completion of projects.

Data Scientist | *Anahita Parvaz international tour and travel company, Iran*

Jun 2018 – Jun 2021

- Performing data mining and data analysis methods on customer information from different sources to achieve the best marketing plans.
- Optimization and decision-making using data science and data visualization for marketing purposes resulted in a 70% income increase.
- Performing time-series data mining and predictions for financial analytics to optimize the company's principal investments.
- Technology advisor and technology planning to improve marketing procedures for new customers and the satisfaction of reliable clients by automating processes.

IT Technician | *Anahita Parvaz international tour and travel company, Iran*

Jun 2015 – Jun 2018

- Webmaster, web manager, and SEO specialist
- Supply management and troubleshooting for software, hardware, and network problems.

EDUCATION

M.Sc. in Computer Science

Amirkabir University of Technology, Iran

Sep 2018 – Sep 2021

B.Sc. in Computer Science

Amirkabir University of Technology, Iran

Sep 2013 – Sep 2018

PUBLICATIONS

- **Ebrat, D.** Paradalis, E. Rueda, L. (2025). ***Lusifer: LLM-based user simulated feedback environment for online recommender systems***. The IEEE 4th International Conference on Computing and Machine Intelligence (ICMI 2025). (Link)
- **Ebrat, D.** Ahmadian, S. Rueda, L. (2025). ***Vectorized Context-Aware Embeddings for GAT-Based Collaborative Filtering***. Canadian Conference on Artificial Intelligence (CanadianAI 2025). (Link)
- **Ebrat, D.** Aminian, T. Ahmadian, S. Rueda, L. (2025). ***End-to-End Personalization: Unifying Recommender Systems with Large Language Models***. Second Workshop on Generative AI for Recommender Systems and Personalization at KDD 2025. (Link)
- **Ebrat, D.** Didehvar, F. Dadgar, M. (2022). ***Iranian Modal Music (Dastgah) Detection Using Deep Neural Networks***. (Link)