Maryam Moadeli

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Senior Data Scientist with extensive experience in natural language processing (NLP) across financial and healthcare sectors. Expert in Machine Learning and optimization operations, with strong quantitative and analytical skills. Proven track record of teamwork, commitment ,and leadership.

WORK EXPERIENCE

RBC   **Toronto, ON**
Senior Data Scientist – Investment Service   *Oct 2022 – Present*

- **Led NLP and GenAI initiatives** for Investment service systems at RBC, significantly enhancing sector-specific data analytics through customized solutions.
- **Deployed scalable NLP components**, integrating information extraction and automating workloads using transformer models, enhancing operational efficiency by 60%.
- **Pioneered the design and implementation of a Retrieval-Augmented Generation (RAG) system** for extracting insights from unstructured data.
- **Worked with cross-functional teams** to identify growth opportunities, improving customer service satisfaction by 25% through **personalized AI-driven insights**.
- **Optimized document retrieval for SMEs** by implementing query understanding, retrieval, and ranking techniques using embeddings and transformer models, reducing search time and increasing relevance.
- Developed and fine-tuned models for **email tag detection and response recommendations** using SBERT embeddings and topic modeling, streamlining responses to frequent queries.
- **Collaborated with key business partners and stakeholders** to develop OCR technologies to convert complex documents and semi-structured tables into digital formats, achieving an accuracy rate above 90%
- Explored designing prompt-based **chatbots with large language models (LLMs)** requiring no training data, configuring open-source LLMs to function as chatbots.
- Implemented **chatbots for FX requests** using Dialogflow, reducing operational workload by automating frequent requests.
- **Maintained active communication with business leaders and technology** teams to develop ideas and align project goals.

Holland Bloorview Hospital   **Toronto, ON**
Data Scientist   *Sep 2019 – Apr 2022*

- Developed an **end-to-end AAC recommender system** for non-speaking children, using advanced NLP models like BERT embeddings to analyze partners' speech and recommend words for the children to use, reducing communication time by 70%.
- Developed an **end-to-end Question Answering system** for COVID-19, utilizing advanced NLP tools such as Haystack, RoBERTa, and BioBERT to facilitate accurate responses to pandemic-related inquiries.
  - Conducted comprehensive data analyses on policy recommendations, risk factors, and the psychological impact of the pandemic, informing strategic decisions.
- **Created a custom chatbot** tailored to children's favorite cartoon characters, enhancing engagement and interaction, using DialogGPT.

Bruntab Energy   **Tehran, Iran**
IoT Engineer   *Mar 2016 – May 2018*

- **Designed and developed cloud-based dataloggers** from concept to deployment in the R&D department within a dynamic start-up environment
- **Devised optimal approaches for IoT devices**, working closely with engineers and clients to meet industrial goals.
- **Led end-to-end design and coding** for various IoT applications, showcasing strong problem-solving and technical skills.

EDUCATION

- **M.Sc** - *Biomedical Engineering*, **University of Toronto | GPA: 3.8/4.0**   *2022*
- **M.Sc** - *Electrical Engineering*, **University of Tehran** | **GPA: 4.0/4.0**   *2016*
- **B.Sc** - *Electrical Engineering*, **University of Tehran** |**GPA: 4.0/4.0**   *2013*
- **MBA**, General, University of Tehran   *2017*

Technical Skills

Programming Languages: Python, SQL, C/C++

Libraries and Framework: Pandas, NumPy, scikit-learn, SciPy, TensorFlow, PyTorch, Keras, NLTK, Spacy

Tools and Platforms: Git, GitLab, Docker, Databricks, AWS (S3,EC2), Azure (Azure ML)

Machine Learning Tools: Large Language Models (LLMs), LangChain, HuggingFace, Transformers, MLOps, Rasa

Volunteer Skills

- Mentored two **KaggleX BIPOC Grant** awardees, advising on **data science and GenAI integration** in business and academic projects.
- Mentored and judged in the **RBC Amplify program**, guiding undergrads in **developing and pitching** business solutions to investors.
- **Provided administrative support for Rubikamp**, an educational non-profit organization, to coordinate and schedule volunteers and help organize events – Mar 2022-present
- Mentored high school students in **Discovery Program** for **capstone STEM projects** – 2019-2020.

Teaching Experience

- **Course Developer and Instructor – *School Bag Project***   *Spring 2024*
  ML & Programming Bootcamp for Afghan Newcomers
- **Course Developer and Instructor - DEEP Robotics**   *Summer 2022*
- **Teaching Assistant, University of Toronto**
  Praxis III-Engineering Science Design   *Winter 2019 -2022*
  CSCA08-Introduction to Computer Science I   *Winter 2021*
  BME1478-Coding for Biomedical Engineers   *Winter 2019-2022*

Personal Projects

- **Built a predictive model** for Amazon music reviews using CNN and LSTM, reducing MSE to 0.5 from 150,000 text reviews.
- Applied **sentiment analysis on tweets** using SVM, XGBoost, and NLTK to assess public opinion during the 2019 Canadian political landscape.
- **Classified and analyzed Data Scientist salaries** from a Kaggle survey of 20,000 participants using Random Forest, SVM, and KNN.
- **Employed web scraping** with Beautiful Soup and clustering algorithms with SciPy to analyze 1,000 job search webpages, extracting key soft and hard skills.