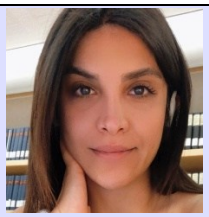
Narges Vahdani

Data Scientist-AI/ML Engineer



Personal

Nationality: Canadian
Martial Status: Single

Contact

Address: 8952 Zurich, Switzerland

Email: nargesvahdani@gmail.com

Phone: +41762700440

LinkedIn: https://www.linkedin.com/in/narghotbi/

Skills

Cloud: AWS, Azure, GCP | Programming: Python, Java, C++, JS/TS, FastAPI, Django, Flask
Data & ML: Pandas, Python, NumPy, PyTorch, TensorFlow, Scikit-learn, ETL, AutoML, RAG
Databases: MySQL, PostgreSQL, MongoDB, Cassandra, Redis, Snowflake, BigQuery
Big Data: Spark, Kafka, Hadoop, Flink | DevOps: Docker, Kubernetes, Airflow, CI/CD
AI & NLP: LLMs, Transformers, GANs, Signal & Image Processing, LangChain, LangGraph
DevOps: Docker, Kubernetes, Airflow, CI/CD, Linux, Bash

Profile

Dedicated AI & Electrical Engineer with proven expertise in Control Systems, AI-driven automation, and data optimization. Recognized for leading cross-functional teams, driving innovation, and delivering strategic solutions that elevate efficiency and profitability. Passionate about emerging technologies and committed to continuous process improvement to create meaningful impact in fast-paced environments.

Work Experience

IBM Research (GIS), Zurich (2024–2025) | Master's Student & Data Engineer Intern

- **Text-to-Geospatial SQL Pipeline:** Developed an instruction-following system using prompt engineering, chain-of-thought reasoning, and metadata integration to boost query precision. Fine-tuned IBM Granite 8B with QLoRA and a custom dataset, then converted it to GGUF for efficient deployment.
- **Agent-Bee (Agentic AI):** Created three Agent-Bee tools—dynamic prompt generation, similar dataset retrieval, and optimal model parameter selection—strengthening IBM's Geospatial Studio Agentic tool in collaboration with NASA.

Basler & Hofmann (BIM), Zurich (2023–2024) | Data Engineer Intern

- **Enhanced B&H Digital Twin (Bbtwin):** Built a voxel-based CNN pipeline for point cloud segmentation using Deep Learning and Java, improving object classification accuracy. Implemented labeled data fine-tuning, Docker, and API integration to streamline workflows.
- **Automated Revit Operations:** Integrated PyRevit with an Agentic AI system to enable chat-based task execution, automating design workflows and data retrieval for increased efficiency in Revit-based processes.

iHomeLab (RAG), Luzern (2023–2025) | Research Assistant

- **AI-Driven Web Scraping & Chatbot Development:** Led projects for advanced question-answering and feedback-collection, increasing user engagement by 40% and boosting university student recruitment. Leveraged Python, PyTorch, LLMs, RAG, LangGraph Agent, HTML, and TypeScript.
- **Smart Home & IoT Data Analytics:** Accelerated elderly care research by developing a real-time analytics platform, improving IoT sensor data processing by 30%. Utilized Python, signal processing, time series analysis, RAG, and similarity search for enhanced research outcomes.

PMO Group (2014–2022, Hamilton, Canada) | Sales Manager & Market Analyst (Power BI & SAP, Machine Learning, AI)

- Led a cross-functional sales and construction team, boosting efficiency and strategic decision-making.

- Developed data-driven solutions using SAP, Power BI, machine learning, and AI to analyze Toronto's real estate market, mitigating risks and enhancing client investment strategies during the pandemic.

Education

- **Master of Science in Data Science-HSLU** (Lucerne University of Applied Sciences) Sep 2022 to Feb 2025
- **Bachelor of Engineering in Electrical Engineering** (Automation & Control Systems) -IKIU – 2011

Technical- Projects

AI-Powered Financial Management Assistant- Madani Consulting (July–Sept 2024)

- Engineered an AI-driven agentic framework for financial operations, integrating OpenAI Assistants API, LangGraph, and Kafka for autonomous decision-making and real-time data flow.
- Boosted budget efficiency by 20% by refining financial decisions and streamlining operations through intelligent orchestration of workflows.

Smart Home for Elderly Individuals (Signal Processing)-4ALL Group (March–September 2024)

- Developed AI-driven Smart Home solutions for elderly care using IoT sensor signals and clustering techniques to enhance safety and independence.
- Improved signal quality by detecting similarities and repairing missing data, enabling more reliable monitoring and proactive assistance.

Question/Answering Chatbot (RAG)- HSLU (June–August 2024)

- Created a web scraping and chatbot platform for Q&A and feedback collection, leveraging LLAMA 3.2, Ollama, OpenAPI, and RAG.
- Harnessed Streamlit, Python, and Pandas for streamlined data processing and automated response generation, enhancing university engagement and user experience.

Build ETL/ELT Pipeline (Data Management & ETL)- Basler Hofmann (Jan–Mar 2024)

- Spark-Based ETL & HR Data Integration: Streamlined HR data workflows using Spark, PostgreSQL, and Azure Database to automate cleansing, deduplication, and reporting.
- LLM-Driven Querying: Built a chatbot-like interface integrating an LLM to transform user questions into SQL queries, execute them on the database, and provide real-time data responses.

Natural Language Processing for Agricultural Data (NLP, AWS)-AgFflow – Supported by Innosuisse (Feb 2023–May 2024)

- Developed and deployed an AI chatbot for the agricultural sector using LLMs and Corrective RAG, driving better decision-making for farmers.
- Optimized models on AWS Lambda Edge (89% accuracy), integrated LangChain for Q&A, and compiled an Innosuisse performance report.

Agentic AI & BIM Integration- Basler Hofmann (Jan 2024)

- Developed a PyRevit + Agentic AI pipeline to automate interactions and decision-making in the Revit environment.
- Engineered an AI agent to analyze historical project data, identify optimal solutions, and apply best practices—reducing staff workload—while integrating a chat-based interface for real-time queries, workflow automation, and data retrieval, streamlining design processes and boosting efficiency.