

# Saba Amanollahi

## Data Scientist/ML Engineer

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### Summary

**Data Scientist and Machine Learning Engineer with a Ph.D. in Computer Engineering and 7+ years of industrial experience.** Skilled in developing sophisticated machine learning and deep learning models, with a strong focus on edge AI, hardware integration, and Research and deployment. Proven track record of driving measurable business outcomes through advanced analytics, including real-time, on-device solutions. Adept at translating complex technical challenges into actionable, business-oriented strategies that meet operational goals and enhance efficiency.

### Experience

#### Data Scientist at Ontic, Manufacturing and Engineering Inc., Los Angeles, CA 12/2022 to 08/2024

- Developed an ML-powered **pricing** tool using **Machine Learning, Deep Learning, and Time Series analysis**, achieving a 60% improvement in **mean absolute error** and reducing Time to Quote by 25%.
- Enhanced the pricing tool with **rule-based** and **reinforcement learning models** based on **feedback** from senior management and pricing data.
- Built a **CI/CD pipeline** with **GitHub Actions** and **Snowflake** for streamlined, automated **model deployment**.
- **Integrated** the pricing model into **Excel** via **VBA** and developed a **Python GUI** for the sales team.
- Improved **revenue forecasting** with **WIN/LOSS validation**, **classification** algorithms, and **feature importance analysis**, achieving a 30% increase in **predictive accuracy**
- **Led** the implementation of **customer segmentation** for targeted **pricing** strategies, focusing on valuable customer segments and reducing **churn**.
- Implemented **Power BI dashboards** with **DAX** to visualize pricing tool usage and **win/loss capture ratio**.
- Applied **binning** with **regression** and **clustering** for **MRO complexity**, **optimizing** pricing by 30%.
- Built **Python scrapers** to **extract** data from **Excel** and load it into **Snowflake**, reducing data collection time by 50%
- Used **DBT** for data testing in **Snowflake**, enhancing data quality for the revenue management department.

#### Machine Learning Engineer at BDD Systems, Tehran, Iran 01/2019 to 01/2022

- Engineered and preprocessed real-time location data (RSS) from nurses and hospital assets using advanced **Redis-based data pipelines**, enhancing data quality for **machine learning models**.
- Implemented **Deep Learning classification algorithms** in **PyTorch** to enhance the accuracy of indoor positioning systems, reducing positioning errors by 15% and significantly enhancing patient care efficiency.
- Designed **geofencing algorithms using Deep learning** to ensure the accessibility and optimal placement of assets during emergencies.
- Developed **embedded programming (C/C++) solutions** for **hardware integration**, enabling seamless deployment of **machine learning models** in real-world devices and systems.
- Built a **scalable backend** with **Django**, **PostgreSQL** and **Docker**, enabling **real-time** data interchange and seamless **deployment** of machine learning models via **RESTful APIs** in **JSON** format, supporting a 24/7 operational environment.
- Defined key performance indicators (**KPIs**) and developed **Python-based** visualizations using **Matplotlib** and **Seaborn** to track and analyze object movements, resulting in a 10% improvement in logistics and resource allocation.
- Deployed **QlikView dashboards** integrated with ML insights, empowering management's **data-driven decision-making**.

#### Data Science Consultant at Kavosh Group, Tehran, Iran 01/2017 to 01/2019

- Designed and implemented **Python-based ML models**, including **regression**, to **optimize pricing strategies**, leading to a 20% profit increase.
- Developed **recommendation systems using SQL** and **Association Rule Learning**, enhancing product offerings and increasing customer satisfaction by 15%.
- Optimized **ETL processes** with **SSIS**, reducing data processing times by 40% and improving data accuracy for better business decisions.
- **Led end-to-end BI solutions** for four major organizations, translating data into actionable insights, reducing costs by 35%, and driving revenue growth.

- Collaborated with **senior management** to define **KPIs** aligned with business goals, improving **decision-making** processes.
- Created **QlikView dashboards** with advanced **scripting**, enhancing **data visualization** clarity and boosting data-driven decision-making.
- **Mentored** junior team members in dashboard development and data analysis, improving team efficiency and quality.

**Lecturer at University of Tehran, Tehran, Iran**

**09/2019 to 01/2022**

- Taught "**Data Structure and Algorithms**" (3 semesters).
- Taught "**Memory Systems/SRAM/DRAM/FLASH**" graduate course (1 semester).

**Lecturer at Shahid Beheshti University, Tehran, Iran**

**09/2014 to 01/2017**

- Taught "**C/C++ programming**" (3 semesters).
- Taught "**Digital Logic/Verilog**" Lab Instructor (1 semester).

## Skills

**Machine Learning & Deep Learning Libraries:** Scikit-Learn, TensorFlow, Keras, PyTorch, PySpark, Scipy, Pandas, NumPy, Matplotlib, Seaborn, NLTK, Statsmodels, xgboost.

**ML Techniques & Architectures:** Model Evaluation, Feature Engineering, Deep Neural Network Architectures, Hyperparameter Tuning, ML Pipeline, Bagging and Boosting, Transfer Learning, Natural Language Processing (NLP), Large Language Models (LLM), Generative AI, LSTM, CNN, RL.

**Statistical Methods:** Hypothesis Testing, Bayesian Inference, Regression Analysis, Time Series Analysis, ANOVA, Principal Component Analysis (PCA)

**Data Management & Engineering Tools:** Snowflake, Postgres, Redis, Git, GitHub, ETL (SSIS), DBT, Fivetran, CI/CD pipeline

**Programming Languages:** Python, C, C++, CUDA (GPU), SQL, R, MATLAB

**Data Visualization:** Power BI, QlikView, Excel

**Hardware Skills & Knowledge:** Verilog, VHDL, VLSI, Digital Design, FPGA, ASIC, SoC, DSP, GPU Architecture, Arithmetic Units, Accelerators, RTL, Embedded Programming, HW/SW Codesign, Hardware Acceleration for AI/ML

## Education

**Ph.D. - Computer Engineering**

**09/2011 to 09/2017**

Shahid Beheshti University - Tehran, Iran (**Top 5** Universities in Iran)

**M.Sc. - Computer Engineering**

**09/2009 to 09/2011**

Shahid Beheshti University - Tehran, Iran (**Top 5** Universities in Iran)

**B.Sc. - Computer Engineering**

**09/2002 to 09/2007**

University of Tehran - Tehran, Iran (**Top 5** Universities in Iran)

## Publications

Published multiple journal papers in IEEE TVLSI, ACM TECS, IEEE ESL, and other leading journals, focusing on arithmetic design research.

[Google Scholar Profile](#)

[LinkedIn Profile: Saba-Amanollahi](#)

## Certifications

- Generative AI with Large Language Models – **Coursera**
- Deep Learning specialization -- **Coursera**
- Medical Image Analysis in Python -- **Educative.io**
- Machine Learning: Natural Language Processing in Python (V2) -- **Udemy**