# Sana Arastehfar

M.Sc. Machine Learning Engineer

github
linkedin
personal site
email

## Education

**Queen's University – M.Sc. Computer Science, GPA: 4.0/4.0** 2022 – 2023

**Azad University of Tehran – B.Sc. Computer Engineering, GPA: 4.0/4.0** 2019 – 2021

**Amirkabir University – A.Sc. Biomedical Engineering** 2011 – 2015

## Technical Skills, Language Skills, and Interests

**Programming Languages**: Python, SQL, MATLAB, C++, PDDL, RDDL
**Machine Learning Frameworks & Cloud Platform**: PyTorch, Scikit-learn, Pandas, AWS SageMaker, Azure ML
**Version Control**: Git, Docker
**Data Visualization**: Streamlit, Plotly, Power BI
**Soft Skills**: Project Ownership, Collaboration, Innovative Problem Solving, Strategic Thinker
**Interests**: Movies, Traveling, Power lifting, Yoga

## Experience

**Machine Learning Engineer, Univerty of Alberta** 2023 – Present
*Residential Fire Prediction* *Edmonton, AB*

- Developing and deployed machine learning models for residential fire prediction across Chicago, utilizing SQL, Python and PyTorch.
- Conducted comprehensive time-series analysis and forecasting to identify high-risk areas, enabling proactive fire prevention measures and resource allocation.
- Used user-friendly dashboards like Streamlit, facilitating data-driven decision-making.
- Presented project findings and insights to university stakeholders and external partners, effectively communicating complex technical concepts to non-technical audiences.

**Summer Geometry Initiative Research Fellow, Massachusetts Institute of Technology** 2023
*Tangible NeRFs and Intrinsic Mollification* *Kingston, ON*

- Conducted research on Tangible Neural Radiance Fields (NeRFs) and intrinsic mollification techniques, advancing the understanding of 3D scene representation and rendering.
- Presented research outcomes to faculty and peers, enhancing the visibility and impact of the project within the academic community.

**Machine Learning Engineer, Hermes Capital (Startup)** 2020 – 2022
*Forecast Short Term Return Values Of Stock Market* *Tehran, IR*

- Engineered machine learning algorithms using **Python** and **PyTorch** for forecasting short-term stock returns in the Iran stock market.
- Applied **time-series analysis** and **forecasting** techniques to identify market trends and optimize trading strategies.
- Implemented diverse learning-based and statistical methods, including ARIMA and LSTM models, to build robust and scalable predictive models tailored to the financial market.
- Presented complex data insights and model outcomes to stakeholders through clear and compelling presentations, facilitating informed investment decisions.
- Collaborated with data scientists, analysts, and financial experts to integrate ML solutions into trading strategies, enhancing overall operational efficiency.

**Co-Founder and COO, Zist Abzar Pars Engineers (Startup)** 2014 – 2020
*Bio Signals Recoding Device Production* *Tehran, IR*

- Co-founded and managed operations of a biomedical startup specializing in the production of bio signal recording devices, overseeing all aspects from product development to market launch.
- Led a team of 3 engineers in designing high-quality biomedical devices, ensuring compliance with industry standards and regulatory requirements.
- Managed financial planning, budgeting, and fundraising efforts, securing over $20K in seed funding from university of Barcelona to support product development.
- Fostered a culture of innovation and continuous improvement, driving the development of cutting-edge biomedical technologies and expanding the company's product portfolio which resulted into development of SnapECG.

**UI/UX Developer, Tamin Online (Startup), Sharif University of Technology** 2017 – 2018
*B2B e-commerce website for selling Industrial Equipment* *Tehran, IR*

- Designed and developed a B2B e-commerce website for selling industrial equipment, enhancing user experience.
- Utilized HTML, CSS, AgularJS, and UX/UI best practices to create intuitive and responsive web interfaces, ensuring seamless navigation and accessibility across devices.
- Collaborated with product managers and stakeholders to gather requirements and translate business needs into functional and aesthetically pleasing web designs.
- Conducted user research and usability testing to identify areas for improvement, implementing iterative design changes.
- Integrated data visualization tools like Power BI to provide insightful analytics dashboards, enabling data-driven decision-making for clients and internal teams.

## Research Projects

**Tangible NeRFs: Geometry-guided NeRF Exploration, [GitHub]** 2022 – 2023
*SGI, Massachusetts Institute of Technology (MIT)*

**Single Agent Behavior Prediction Using Linear Temporal Logic (LTL) in Soccer, [GitHub], [Presentation]** 2022 – 2023
*M.Sc. Thesis, Queen's University*

**Visual Representation Learning of Colorectal Cancer in Histology Images Using Contrastive Learning, [GitHub]** 2022
*Research, Queen's University*

**Smart Meter Data Analysis for Prediction of Residential Energy Consumption, [GitHub]** 2020 – 2021
*B.Sc. Thesis, Azad University of Tehran*

**Heart Attack Prediction & Implementation of Portable ECG** 2019 – 2020
*Zist Abzar Pars Engineers*

## Publications

**Short-Term Residential Load Forecasting Using Graph Convolutional Recurrent Neural Network, in Elsevier Engineering Application of Artificial Intelligence, 2022 S. Arastehfar**, M. Matinkia, M. Jabbarpour

## Awards & Honors

**Vector Scholarship In Artificial Intelligence (17,500 CAD)** 2022

**Canadian Statistical Science Institution(CANSSI) sport analysis grant (10,000 CAD)** 2022

**UTSPAN Scholarship for pre-CASSIS workshop** 2022