Sana Arastehfar

M.Sc. Machine Learning Engineer

github
linkedin
personal site
email

About Me

I am a Machine Learning Engineer with extensive experience in research and applied machine learning. My expertise spans time-series analysis, predictive modeling, and computer vision, with over 8 years of experience in the startup ecosystem, I bring a unique blend of technical expertise and entrepreneurial spirit. I was a co-founder of a biomedical startup specializing in developing signal recording devices. My background demonstrates a strong ability to innovate, solve complex problems, and adapt to new challenges. I am passionate about continuous learning and thrive in environments where I can explore cutting-edge technologies and deliver impactful solutions.

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 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 2024 – Present

Residential Fire Prediction

- Developing and deploying machine learning models for residential fire prediction across US, 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.

Summer Geometry Initiative Research Fellow, Massachusetts Institute of Technology 2023

Tangible NeRFs and Intrinsic Mollification

- 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

- Engineered machine learning algorithms using Python and PyTorch for forecasting short-term stock returns in the Iran stock market.
- 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.

Co-Founder and COO, Zist Abzar Pars Engineers (Startup) 2014 – 2020

Bio Signals Recoding Device Production

- 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 engineers in designing high-quality biomedical devices, ensuring compliance with industry standards and regulatory requirements.
- Managed financial planning, budgeting, and fundraising efforts.
- 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

- 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.
- 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

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