

SHAHAB BAHREINI JANGJOO

AI Engineer | Data Scientist | R&D Scientific Consultant

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Summary

Experienced Researcher and Software Developer with **dual M.Sc. degrees in Physics** and **one in Computer Science**, complemented by a robust mathematical and statistical analysis skill set.

- Expertise in Data Science, Deep Learning, Neural Networks, and Machine Learning, with proficiency in Decision Tree, Clustering, and Regression analysis.
- Skilled in Image Processing, Parallel Computing, and AI Modeling. Demonstrated success in Industrial R&D, particularly in Power Electronics and Smart Thermostat Software development.

Experience

ENA Solutions

Calgary, Canada

AI Engineer | Data Scientist (Mitacs Internship)

11/2023 - 02/2024

ENA Solution is a developer of app-based industrial smart thermostat system.

- AI Temperature Predictor Development:** Led AI predictor development for ENA Smart Thermostats, achieving <2.0 °C deviation in accuracy.
- Machine Learning and Neural Networks:** Innovated with multiple Machine Learning models and Neural Networks, enhancing data preprocessing and feature engineering.
- Data Management for Problem-Solving:** Managed 600K+ data points, per device, using diverse Machine Learning models and Neural Networks.
- Energy Bill Parser Creation:** Developed an OCR-based Automated Energy Bill Parser, focusing on efficient data extraction from PDFs and images.
- API Data Flow Management:** Oversaw RESTful API data flow in Python, supporting communication for 200+ IoT devices.
- Programming Techniques Improvement:** Improved code readability and maintainability by 50% through Functional Programming and OOP.

Niroutrans Co.

Shiraz, Iran

R&D Scientific Consultant | Software Developer (Full time)

01/2017 - 08/2019

NirouTrans Co., established in 1990, specializes in manufacturing electrical transformers, bushings, capacitors, circuit breakers, and switchgear.

- Automated Electric Insulation Design Program:** Developed a C++ program for optimized electric insulation designs of Electrical Bushings, integrating with Ansys Maxwell 2D for EM field simulations.
- RIS Electrical Bushing Production Line:** Led the establishment of an internal RIS electrical bushing production line up to 15Kv, managing a team of 8 electrical engineers.
- Data Analysis Tool Development:** Created macro-based Excel tools for efficient data analysis and product troubleshooting.
- Scientific Consultancy in Voltage Products:** Acted as a scientific consultant for diagnosing and solving issues in High/Medium/Low Voltage products.

Education

Saskatchewan Polytechnic

Saskatoon, SK, Canada

Visiting Student at Digital Integration Centre of Excellence (DICE)

03/2024 - 2025

- AI Engineer
- Software Developer

University of Saskatchewan

Saskatoon, SK, Canada

M.Sc. Computer Science (Applied Computing)

2022 - 02/2024

- Plasma Behavior Simulation:** Simulated plasma behavior of charged particles in electromagnetic fields using Julia and C++, enhancing understanding of particle dynamics in magnetic nozzles.
- Parallel Computing Efficiency Analysis:** Performed parallel computing in Julia on CPU and GPU, demonstrating enhanced performance with GPU, vital for multiprocessing efficiencies in charged particle systems.

University at Albany

Albany, NY, U.S.

M.Sc. Physics (Optics)

2019 - 2021

- Optical Aberrations' Detection in DHM:** Devised mathematical models to detect Digital Holographic Microscopy (DHM) optical aberrations, achieving 3x faster image processing through Cythonization and Multiprocessing.
- Automated Biophysics Image Analysis:** Created a Python, OpenCV application for biophysics cell image analysis, reducing processing time from weeks to seconds for extensive datasets.

Education

Shiraz University

Shiraz, Iran

M.Sc. Physics (Complex Systems)

2013 - 2016

- **Neuronal Network Simulation:** Conducted a dHAN model simulation using C++ to mimic brain function in 300-500 neuron networks, revealing exponential trends in network activity over a 3-month period, resulting in a substantial 2GB data set.
- **Runge-Kutta Method Application:** Applied Runge-Kutta 4th order method for precise system analysis and modeling in complex systems.

Shiraz University

Shiraz, Iran

B.Sc. Physics (Solid-State)

2009 - 2013

TECH SKILLS

Programming Languages: Python · C++ · Julia

Python Libraries & Packages:

Multiprocessing · Numpy · Pandas · Scikit-learn · TensorFlow · PyQT · PyTorch · Matplotlib · Plotly · Selenium · Beautiful Soup

Machine Learning & Modeling Techniques:

Linear Regression · Random Forest · LightGBM · Gradient Boost · SVR · KNN · CNN · RNN · FNN · SVR · Skforecast · LSTM · PCA

Database & Data Handling Skills: MySQL · SQL · SQLite · Excel · Statistical Analysis

Cloud & Container Technologies: Docker · Kubernetes · Google Cloud

APIs & Web Technologies: RESTful API · OpenCV · Postman · JSON · YAML

Version Control Systems: Git · SVN

Development & Collaboration Tools: Google Colab · Jupyter · GitHub · BitBucket · Miro · ClickUp · Figma

Blockchain Technologies: Blockchain Structure · Solidity · Hardhat

Operating Systems: Windows · Linux · Mac

Certification

Introduction to Containers w/ Docker, Kubernetes & OpenShift

— IBM via Coursera, 2023
(<https://coursera.org/share/5c4934b9dde9f6f469e92c07bd9c69f5>)

Foundations of Cybersecurity — Google via Coursera, 2023 (<https://coursera.org/share/90c6059b85789bfb446f2581d34110a1>)