

MOHAMMAD HOSSEIN AMINIAN

Data Scientist | AI Modeler | Analyst

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SUMMARY

A highly motivated and technically proficient researcher with hands-on experience in Artificial Intelligence, Machine Learning, and Data Science, particularly in interdisciplinary applications such as material machining and cybersecurity. I specialize in developing and optimizing predictive models using artificial neural networks, feature selection techniques, and metaheuristic algorithms under limited-data conditions. With a strong foundation in statistical analysis, algorithm implementation, and sensitivity modeling, I am passionate about bridging domain knowledge with advanced AI methodologies. I actively contribute to ongoing research and continue refining models and workflows to achieve interpretable, high-performance results across scientific and real-world datasets.

EXPERIENCE

Graduate Research Assistant

Mahallat Institute of Higher Education – Mahallat, Iran

Sep 2024 – present

- Assisting with interdisciplinary research on machine learning, neural networks, and optimization methods for engineering applications.
- Contributing to scientific writing, code development, and experimental design for joint publications.

Teaching Assistant, Principles of Computational Intelligence

Mahallat Institute of Higher Education – Mahallat, Iran

Mar 2024 - Jun 2024

- Supported undergraduate students with course material, coding exercises, and project development.
- Provided assistance during lectures, graded assignments, and conducted review sessions.

Organizer and trainer of Python programming workshop

Mahallat Institute of Higher Education – Mahallat, Iran

Dec 2022

- Designed and delivered an introductory workshop on Python programming fundamentals.
- Created practical coding exercises and guided participants through hands-on applications

EDUCATION

B.Sc. Computer Engineering

Mahallat Institute of Higher Education – Mahallat, Iran

Sep 2019 – Sep 2024

GPA: 16.76/20 | 3.5/4.0 | 8.4/10

Data Science Training

Tose'e Higher Education Studies – Tehran, Iran

Jan 2022 - Mar 2023

Lecturer: Dr. Farzad Minooei (LinkedIn)

PUBLICATIONS

Metaheuristic Optimization and Cross-Validated Training of Neural Networks: A Reproducible Framework Applied to EDM of Inconel 718.

M.H. Aminian., A. Khosravi., MH. Hashemi, H. Kolivand.

IEEE Transactions on Industrial Informatics, Under Review

Class-Aware Feature Selection with Core and Auxiliary Subsets for Multi-Class Intrusion Detection.

MH. Aminian, A. Khosravi, A. Azarnick,
4th International Conference on Distributed Computing and High-Performance Computing (DCHPC 2026), Accepted

A Cross-Validation Framework for Robust ANN Modeling: Application to Electrical Discharge Machining of Inconel 718.

MH. Aminian, A. Khosravi, A. Azarnick,
11th International Conference on Signal Processing & Intelligent Systems (ICSPIS 2025), Accepted

PROJECTS

Material Hardness Prediction & Sensitivity Analysis 2024 – present

- Developed a two-stage modeling pipeline using feature selection and regression to predict material hardness.
- Conducted sensitivity analysis to interpret model behavior.

Feature Optimization for Intrusion Detection Systems SEP 2024 – present

- Designed a class-specific feature selection framework using multi-objective optimization.
- Built a modular and interpretable intrusion detection system.

SKILLS

Programming & AI:	Python, R, Scikit-learn, TensorFlow, Keras, Model Selection & Evaluation, Hyperparameter Tuning, Pipeline Integration, Deep Learning, NLP, Generative AI (LLMs)
Data Engineering:	Data Preprocessing, Feature Engineering, Data Manipulation & Transformation, Time Series Processing, ETL Pipeline Designing
Data Visualization:	Matplotlib, Seaborn, Statistical & Categorical Plotting, Dashboard Design
Data Analytics & BI:	SQL (SQL Server, MySQL), Power BI, Tableau, Excel (VLOOKUP, Pivot Tables, Conditional Formatting)
Web Development:	Django, Django REST Framework (DRF), HTML, CSS, Bootstrap 5, Git & GitHub
Soft Skills:	Teamwork, Problem Solving, Time Management, Adaptability, Teaching

LANGUAGES

Persian: Native **English:** B2 (IELTS Overall 6.5)

INTERESTS

Large Language Models (LLMs) | Generative AI | FAIR Data Management and Big Data
Natural Language Processing (NLP) | Deep Generative Learning | Reinforcement Learning