Omid Rostami

(484) 475-8230| omideo@iastate.edu | 2604 Stange Rd, Ames, IA 50010

Education

Iowa State University, Ames, IA — Anticipated May 2024
Master of Science in Industrial Engineering
GPA: 3.87/4.00

Sharif University of Technology, Tehran, Iran — Aug 2011 to May 2017
Bachelor of Science in Industrial Engineering
GPA: 3.71/4.00

Research Interest

I am deeply interested in the fields of Machine Learning, Deep Learning Application, Image Processing, and Computer Vision.

Research Experience

During my master's program I conducted research on a trade dataset between China and the US, aimed at identifying the characteristics of companies that contribute to being in the top 10, or "Superstars," in the following year. Developed expertise in feature selection and transformation methods, including Forward Feature Selection, RFE, and Boruta, as well as PCA. Tested various models to predict next year's Superstars of an industry based on selected features, resulting in a comprehensive understanding of the accuracy of feature selection. Currently I submitted this paper. Now, I'm exploring contributing to a second paper that builds on the current research by implementing using Genetic Algorithm with modified objective functions.

Publications

Published:

Ahmadi Shahrakht, A., Hajirahimi, P., Rostami, O., & Martín, D. (2023). A Novel Attack on Complex APUFs Using the Evolutionary Deep Convolutional Neural Network. Intelligent Automation & Soft Computing, 37(3), 3059–3081. https://doi.org/10.32604/IASC.2023.040502
Citation: 0

Baniasadi, S., Rostami, O., Martín, D., & Kaveh, M. (2022). A Novel Deep Supervised Learning-Based Approach for Intrusion Detection in IoT Systems. Sensors 2022, Vol. 22, Page 4459, 22(12), 4459. https://doi.org/10.3390/S22124459
Citation: 13

Rostami, O., & Kaveh, M. (2021). Optimal feature selection for SAR image classification using biogeography-based optimization (BBO), artificial bee colony (ABC) and support vector machine (SVM): a combined approach of optimization and machine learning. Computational Geosciences, 25(3), 911–930. https://doi.org/10.1007/S10596-020-10030-1/METRICS
Citation: 37

Rostami, O., Tavakoli, M., Tajally, A. R., & GhanavatiNejad, M. (2023). A goal programming-based fuzzy best–worst method for the viable supplier selection problem: a case study. Soft Computing, 27(6), 2827–2852. https://doi.org/10.1007/S00500-022-07572-0/TABLES/20
Citation: 9

Sadeghi, F., Larijani, A., Rostami, O., Martín, D., & Hajirahimi, P. (2023). A Novel Multi-Objective Binary Chimp Optimization Algorithm for Optimal Feature Selection: Application of Deep-Learning-Based Approaches for SAR Image Classification. Sensors 2023, Vol. 23, Page 1180, 23(3), 1180. https://doi.org/10.3390/S23031180
Citation: 8

Sadeghi, F., Rostami, O., Yi, M. K., & Hwang, S. O. (2022). A Deep Learning Approach for Detecting Covid-19 Using the Chest X-Ray Images. Computers, Materials & Continua, 74(1), 751–768.
https://doi.org/10.32604/CMC.2023.031519
Citation: 6

Submitted:
Rostami, Omid and Fili, Mohammad and Zhang, Wendong and Hu, Guiping and Zhang, Wei, Superstar Firms Identification Using Machine Learning: Evidence from Chinese Manufacturing Firms. Available at SSRN: https://ssrn.com/abstract=4437829 or http://dx.doi.org/10.2139/ssrn.4437829

Technical Skills

Statistical Analysis and Computational Mathematics:

- **Statistics, Probability, and Linear Algebra**: Applied these foundational principles in various research projects and coursework. Regularly used these principles for data analysis and hypothesis testing.
- **MATLAB**: Utilized for numerical computing in various academic projects in the Linear Programming class.

Data Visualization:

- **Power BI**: Utilized for creating interactive reports and dashboards to effectively communicate research findings.

Programming Languages:

- **R:** Employed for statistical computing, graphics and implementing machine learning application in coursework and independent research projects in Data mining class.
- **Python (Main Focus):** Used for a range of applications, from data analysis and visualization to machine learning and deep learning.

Machine Learning and Deep Learning:

- **TensorFlow and PyTorch**: Used these frameworks to build, train, and deploy various machine learning and deep learning models in academic projects and my publications.
- **OpenCV**: Applied in computer vision tasks in image processing of satellite images.
- **Keras**: Utilized for building and training deep learning models in Deep learning courses and my research about X-ray images.
- **Scikit-learn**: Used for implementing traditional machine learning algorithms in various projects.

Python Libraries for Data Science:

- **Numpy and Pandas**: Used for data manipulation and analysis in multiple research projects.
- **Seaborn and Matplotlib**: Employed for creating static, and interactive visualizations in Python to present research data.

Teaching Experience

An introduction to C++ in Sharif University of Technology

- Course Teaching
- Exams and quizzes designing and grading

Professional Experience

INVISION Architecture, Des Moines, IA From May 2023

Data Scientist intern

- Collect and organize data from diverse design software sources to facilitate analysis.
- Cleanse and prepare data for further analysis, ensuring data quality and accuracy.
- Identify problem areas and devise effective solutions by leveraging data-driven insights.
- Utilize Power BI to create visually engaging data visualizations for various purposes.
- Develop and implement machine learning models to predict project costs and profitability.
- Create interactive reports for clients, enhancing their understanding of project details.

Dmond Innovation Group, Tehran, Iran May 2016 to Oct 2021

Pre-Accelerator Director and Business Data Analyst

- Educating startup teams on business planning
- Estimating incomes and expenses in the short term
- Preparation of business plan
- Evaluating startups for investment

Honor and Awards

- Awarded the Dean's Master's Scholarship and In-State Scholarship at the University of Houston.
- Advanced to the second round of the Nationwide Mathematics Olympiad in Tehran, Iran, a competition with over 31,000 participants.
- Achieved a rank of 348 in the nationwide university entrance exam (undergraduate) among 284,000 participants in Tehran, Iran.
- Successfully passed one of the most competitive recruitment tests for private, commercial, and technology companies nationwide in Tehran, Iran.

Certificates

Deep Learning Specialization - Coursera: Gained advanced skills in structuring Machine Learning projects and improving deep neural networks.

Improving Deep Neural Networks - Coursera: Acquired expertise in techniques for improving deep neural networks such as optimization algorithms and regularization methods.

Data Analysis with Python - Coursera: Honed skills in Python for data analysis, including data wrangling, data cleaning, and data visualization.

Deep Learning A-Z - Udemy: Explored various aspects of deep learning, from building and training neural networks to tuning hyperparameters.

Microsoft Power BI - Udemy: Gained proficiency in data visualization and creating interactive dashboards.

Machine Learning A-Z - Udemy: Developed a comprehensive understanding of Machine Learning techniques from model selection to model tuning.

Supervised Machine Learning: Regression and Classification - Coursera: Acquired specialized knowledge in using supervised learning algorithms for regression and classification tasks.

Taken Academic Courses

- Machine learning
- Data mining
- Big data optimization
- Linear Programming
- Advanced linear optimization
- Probability stat for engineers