Fatemeh Aghaeipoor

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🌐 https://scholar.google.com/citations?user=oOBigssAAAAJ&hl=en

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CURRENT STATUS

Postdoctoral Researcher, School of Computer Science, Institute for Research in Fundamental Sciences (IPM), 2021-Persent

EDUCATION

Ph.D. in Computer Science (Soft Computing and Artificial Intelligence)

Department of Math and computer science, Shahid Bahonar University of Kerman, Iran [2017 –2020].

Thesis: A multi-objective evolutionary fuzzy system for learning high dimensional regression.

M.Sc. in Artificial Intelligence (AI)

Department of Computer Engineering, Shahid Bahonar University of Kerman, Iran [2012 –2014].

Thesis: Usage of intelligent methods in target tracking in wireless sensor networks.

B.Sc. in Software Engineering

Department of Computer Engineering, Iran University of Science & Technology (IUST), Tehran, Iran [2008].

Thesis: Fire Detection in wireless sensor networks.

TEACHING EXPERIENCE

Lecturer at Shahid Bahonar University of Kerman, Kerman, Iran, [2014 – 2021].

RESEARCH INTERESTS

eXplainable Artificial Intelligence(XAI), Computer Vision, Machine/Deep Learning, Big Data, Fuzzy theory.

TECHNICAL SKILLS

- **Explainability AI:** IG, DeepLift, LRP, ACE, CRP, TCAV,…
- **Computer Vision tasks:** image classification, object detection/recognition/segmentation, CNNs, R-CNNs, YOLOs, GANs, vision transformers, transfer learning using pre-trained models like VGG, MobileNet, Inception, ResNet.
- **Data Science tasks:** Data acquiring, cleaning, exploring, visualizing, building predictive models.
- **XAI:** Post-hoc explainability methods e.g., Lime, SHAP, Concept-based methods: TCAV, ACE,..
- **Optimization algorithms:** PSO, Genetic, ACO, NSGA, SPEA, …
- **Others:** Data-driven fuzzy models.

PROGRAMMING SKILLS

- **Python, Matlab, C, C++, C#**
- **ML** - (scikit-learn, NumPy, Pandas, matplotlib, Seaborn, Plotly)
- **Deep learning** (Tensorflow, Keras, pytorch)
- **Big Data** (Spark Framework: PySpark, Scala)
- **Others:** OPENCV2,Git, UML, MySQL

RESEARCH EXPERIENCES

- **Visiting Researcher at University of Granada, Spain,**
  Under supervision of Francisco Herrera and Alberto Fernandez, 2019 – 2020.
- **Attendance in the 2nd Winter School of GraDana Erasmus+ Project,**
  Aristotle University of Thessaloniki (AUTH), Thessaloniki, Greece, 2019.
- **Collaboration in 3 National projects at Mahani research center, Shahid Bahonar University of Kerman.**

HONORS AND AWARDS

- Best Researcher Award in Shahid Bahonar University of Kerman - 2020.
- Best Researcher Award in computer science department, Shahid Bahonar University of Kerman - 2019.
- First Rank graduate PhD student in computer Science, Shahid Bahonar University of Kerman - 2020.
- Second Rank graduate M.Sc. student in computer Engineering, Shahid Bahonar University of Kerman - 2014.

JOURNAL PUBLICATIONS

- F. Aghaeipoor, D. Asgarian, M. Sabokro, "Expanding Explainability Horizons: A Unified Concept-Based System for Local, Global, and Misclassification Explanations", arXiv preprint arXiv:2306.03531

- F. Aghaeipoor, M. Sabokro, A. Frenández, "Fuzzy Rule-Based Explainer Systems for Deep Neural Networks, From Local Explainability to Global Undrestanding", IEEE Transaction on Fuzzy Systems, DOI: 10.1109/TFUZZ.2023.3243935.
- F. Aghaeipoor, M.M. Javidi, A. Frenández, "IFC-BD: An Interpretable Fuzzy Classifier for Boosting Explainable Artificial Intelligence in Big Data", IEEE Transaction on Fuzzy Systems, vol. 30, no. 3, pp. 830-840, 2022.
- F. Aghaeipoor, M.M. Javidi, "A hybrid fuzzy feature selection algorithm for high-dimensional regression problems: An mRMR-based framework", Expert Systems with Applications, 162:113859-113869, 2020
- F. Aghaeipoor, M.M. Javidi, "On the influence of using fuzzy extensions in linguistic fuzzy rule-based regression systems", Applied Soft Computing, 79: 283–299, 2019.
- F. Aghaeipoor, M.M. Javidi, "MOKBL+MOMs: An interpretable multi-objective evolutionary fuzzy system for learning high-dimensional regression data", Information Sciences 496: 1–24, 2019.
- F. Aghaeipoor, M. Eftekhari, "EEFR-R: Extracting Effective Fuzzy Rules for Regression problems, through the cooperation of association rule mining concepts and evolutionary algorithms", Soft Computing, 23: 11737-11757, 2019.
- F. Aghaeipoor, M. Mohammadi, V. Sattari, "Energy Efficient Target Tracking in Heterogeneous WSNs Using a Combination of Activation Mechanism and Prediction Method", Journal of Electronics Industries ,9:83-95, 2018.

CONFERENCES

- F. Aghaeipoor, M.M. Javidi, I. Triguero, A. Frenández "Chi-BD-DRF: Design of Scalable Fuzzy Classifiers for Big Data via A Dynamic Rule Filtering Approach", IEEE International Conference on Fuzzy Systems (FUZZ-IEEE) 2020.
- F. Aghaeipoor, M. Mohammadi, V. Sattari, "Target Tracking In Noisy Wireless Sensor Network Using Artificial Neural Network", 7th International Symposium on Telecommunications (IST), 2014.
- F. Aghaeipoor, S. Saeid, V.Sattari, "Emotion detection of Farsi text using weighting method", The 5th Conference on Information and Knowledge Technology IKT- 2013.

PROFESSIONAL SERVICE

- **Presentation:** Application of deep learning in computer vision (12h workshop) in Shahid Bahonar University of Kerman
- **Program Committee:** The 8th World Congress on Engineering and Technology (CET 2021).
- **Reviewer:** Applied Soft Computing, Information Sciences

LANGUAGE SKILLS

Persian   English Proficient user

REFERENCES

- **Alberto Fernández,** Associate Professor in Computer Science and Artificial Intelligence, University of Granada, alberto@decsai.ugr.es
- **Mohammad Masood Javidi,** Associate Professor in Computer Science, Shahid Bahonar University of Kerman. javidi@uk.ac.ir
- **Mohammad Sabokro,** Assistant Professor in School of Computer Science, Institute for Research in Fundamental Sciences (IPM), **sabokro@ipm.ir**