Sara Iftikhar

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Education

Master of Science in Electrical Engineering (DSSP)   *Islamabad, Pakistan*

NUST, School of Electrical Engineering and Computer Sciences   *2017 - 2020*

- Thesis title: "Formal Verification of E-Voting Protocols using Probabilistic Model Checking"

Bachelors of Electrical Engineering (Electronics)   *Islamabad, Pakistan*

Air University   *2013-2017*

- Thesis title: "Blind Spot Detection System for Vehicles"

Interest Domain

Development of data-driven models for tabular and time-series data

- Modelling water quality parameters (Antibiotic resistance genes) using supervised machine learning
- Modeling pollutant removal efficiency from industrial wastewater using artificial intelligence

Skills

Python

- Object-oriented programming
- Visualization (matplotlib, seaborn, plotly)
- Array manipulation (numpy, pandas)
- Data handling (.xlxs, .json, .csv, .h5, .nc)

Machine Learning

- TensorFlow (building and training neural networks for Tabular and Time series data)
- Scikit-learn (using differnt Ensemble methods, Decision trees and Neural network models for classification and regression problems)
- LightGBM, XGBoost, CatBoost
- Experiment Tracking (weights&biases)

Version Control

- git

Python Libraries

AutoTab (Owner)
Framework for machine learning pipeline optimization
https://autotab.readthedocs.io

easy_mpl (Owner)
Data visualization recipes
https://easy_mpl.readthedocs.io

AI4Water (Contributor)
Framework for data-driven modeling of tabular data with focus on hydrology
https://ai4water.readthedocs.io

Blogs

ADSORPTION CAPACITY PREDICTION ON CARBON-BASED MATERIALS USING DEEP LEARNING
https://testing11.readthedocs.io

COMPARISON OF DIFFERENT XAI METHODS FOR ANTIBIOTIC-RESISTANCE GENES OCCURRENCE AT RECREATIONAL BEACHES
https://xai-arg-jema.readthedocs.io

DECIPHERING THE INTERACTION OF PHYSIO-CHEMICAL PARAMETERS OF WATER WITH ARGs
https://isl-env-ai.readthedocs.io

PROBABILISTIC PREDICTION OF ADSORPTION CAPACITY OF PHOSPHATE ONTO BIOCHARS
https://abcabc.readthedocs.io

Publications

* CO-FIRST AUTHOR

PUBLISHED

S. Iftikhar, A. Karim et al., "Prediction and interpretation of antibiotic-resistance genes occurrence at recreational beaches using machine learning models", **Journal of Environmental Management**, **(IF=8.7)**, https://doi.org/10.1016/j.jenvman.2022.116969

UNDER REVISION

S. Iftikhar, N. Zahra, et al., "Artificial neural networks for insights into adsorption capacity of industrial dyes using carbon-based materials", **Separation and Purification Technology**, **(IF=8.6)**

SUBMITTED

N. Zahra, **S. Iftikhar***, et al., "Probabilistic prediction of adsorption capacity of Phosphate onto biochars using machine learning methods", **Chemical Engineering Journal**, **(IF=15.1)**

R. Sumra, N. Zahra, **S. Iftikhar**, et al., "Florine-free hydrothermal synthesis of niobium carbide (MXene) for adsorption of Cr(VI) ions from aqueous solution and machine learning insights", **Journal of Hazardous Materials**, **(IF=13.6)**

IN PREPARATION

S. Iftikhar, et al., "Deciphering the relationship between antibiotic resistance and physio-chemical parameters of sewage water using machine learning"

Professional Experience

062016 - 072016	**Internee Engineer**, Pakistan Civil Aviation Authority	
072016 - 082016	**Internee Engineer**, Pakistan Aeronautical Complex	

Language Proficiency

ENGLISH (IELTS 7.0)

Awards, Fellowships, & Grants

2016   **Final Year Project Research Grant**, National ICT R&D, Pakistan

References

Available upon request