Sara Iftikhar

POSTAL ADDRESS: HOUSE # G-3755, PELICAN LANE, KAUST, THUWAL, MECCA DISTRICT, KINGDOM OF SAUDIA

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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

- Visualization (matplotlib, seaborn, plotly)
- Object-oriented programming
- 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

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

AUTOTAB (OWNER)
Framework for machine learning pipeline optimization
https://autotab.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://ai4adsorption.readthedocs.io/

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

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)**, https://doi.org/10.1016/j.seppur.2023.124891

R. Ishtiaq, N. Zahra, **S. Iftikhar**, et al., "Adsorption of Cr(VI) ions onto fluorine-free niobium carbide (MXene) and machine learning prediction with high precision", **Journal of Environmental Chemical Engineering**, **(IF=7.7)**, https://doi.org/10.1016/j.jece.2024.112238

SUBMITTED

N. Zahra, **S. Iftikhar***, et al., "Probabilistic prediction of adsorption capacity for phosphate ion removal onto biochar materials using machine learning algorithms with a large dataset", **Bioresource Technology**, **(IF=11.4)**

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
062021 - 102021	**Lab Technician**, Ulsan National Institute of Science & Technology, South Korea
062022 - 102022	**Lab Technician**, Ulsan National Institute of Science & Technology, South Korea
052020 - 032023	**Teacher**, Dot & Line, Pakistan
062023 - 022024	**Remote Reseacher**, Environmental AI, Pakistan

Language Proficiency

- English (IELTS 7.0)

Awards, Fellowships, & Grants

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

References

Available upon request