

Sara Iftikhar

POSTAL ADDRESS: HOUSE#09, STREET#11, RIVER GARDENS, ZONE-5, ISLAMABAD, PAKISTAN

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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 (.xlsx, .json, .csv, .h5, .nc)

MACHINE LEARNING

- TensorFlow (building and training neural networks for Tabular and Time series data)
- Scikit-learn (using different 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://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>

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., “Fluorine-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
062021 - 102021 **Lab Technician**, Ulsan National Institute of Science & Technology, South Korea
062022 - 102022 **Lab Technician**, Ulsan National Institute of Science & Technology, South Korea
062023 - present **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