

PERSONAL INFORMATION

Nazia Shahzadi

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📅 Date of birth 23 May 1999 | 🇵🇰 Nationality Pakistani

OBJECTIVE

To secure a position in a PhD program where I can engage in advanced research, contribute to the academic community through innovative studies, and further develop my expertise.

WORK EXPERIENCE

July 2023 – Continue

Lecturer

Ghulam Ishaq Khan Institute of Engineering Sciences and Technology, Topi, Swabi, Khyber Pakhtunkhwa, Pakistan

- Work as Lecturer in Faculty of Computer Science and Engineering (FCSE)
 - CS417 (Parallel Processing)
 - CS311 (Operating Systems)

Sep 2021 – June 2023

Research Associate

Communications Over Sensors (ComSens Lab), Department of Computer Science, COMSATS University Islamabad, Islamabad, Pakistan.

- Worked as AI Lab instructor
- Given the tasks to the students of BS and MS related to Artificial Intelligence and Data Science
- Taught the courses in replacement of my mentor to the students of BS (CS) and MS (CS)
 - CSC668 (Machine Learning)
 - CSC683 (Advanced Algorithm Analysis)
 - CSC764 (Advanced Topics in Artificial Intelligence)
 - CSC511 (Theory of Programming Languages)

Sep 2018 – Aug 2021

Websites Developer

Under the supervision of Mr. Hamaiz Ahmad, Sahiwal, Pakistan

- Worked in Python, PHP, and LARAVEL

Oct 2017 – Dec 2017

Content Rewriter

Codehub, Sahiwal, Pakistan

- Worked on rewriting research papers in the domain of data science
- Worked on removing the plagiarism

EDUCATION AND TRAINING

2021–2023 Master of Science (Computer Science)

COMSATS University Islamabad Islamabad, Pakistan **CGPA: 3.96/4.00**

2017–2021 Bachelor of Science (Computer Science)

University of Central Punjab (UCP) Lahore, Pakistan **CGPA: 3.98/4.00 (Gold Medalist)**

2021–2023 MS - Thesis Title: “A Robust and Efficient Model for Detection of Non-Technical Losses to Secure Smart Grids using Artificial Intelligence”, Research in Data Science

Abstract Electricity theft (ET) is a significant issue in the energy sector, causing monetary losses for power utilities. Detecting ET is challenging due to low detection rates and high false positive rates. To address this, a combination of techniques including Fast Food Transform with Time Series Lag Embedded Network (TLENET), Wavelet Transform with TLENET, and Nystroem method with TLENET has been proposed. The model, analyzed using a real-world dataset, achieved 94% accuracy, 92% F1-score, 93% AUC-ROC, and 87% Matthews Correlation Coefficient. Extensive experiments show the proposed model outperforms existing detectors.

2017–2021 BS - Thesis Title: “Digital Health Care System

Abstract The project develops a digital platform for the Digital Healthcare System, utilizing PHP and Laravel technology, enhancing patient-doctor engagement, access to services, and medical resource availability, highlighting the complex interplay between medical practice and technology.

JOURNAL PUBLICATIONS

- [1] MADIHA JAFFAR¹, SUNDAS SHAFIQ¹, NAZIA SHAHZADI¹, *et al.* “Efficient Deep Learning Models for Predicting Super-Utilizers in Smart Hospitals.” In IEEE Access, 2023. *Published.*
- [2] Nazia Shahzadi, Nadeem Javaid, *et al.* “A Novel Data-Driven Approach for Combating Anomalous Electricity Consumption in Smart Grids using Artificial Intelligence.” In Expert Systems with Applications, 2023. *In review process.*
- [3] Nazia Shahzadi, Nadeem Javaid, *et al.* “Revolutionizing Energy Efficiency in Smart Cities: Anomalous Electricity Consumption Detection in Power Grids using Artificial Intelligence.” In The Journal of King Saud University, 2023. *In review process.*

RESEARCH PROJECTS

- Classification and Detection**
- Deep Learning Based BERT and GAN for Sentiment Analysis
 - Game theory based GAN for Data Generation
 - Mental Illness Detection on Twitter using Word2Vec Deep model
 - Anomaly Detection using RNN, LSTM, GRU, and MGU on Smart Grid Corporation of China (SGCC) and Pakistan Residential Energy Consumption (PRECON) datasets
 - Health Services ChatBot Creation in PYTHON to provide health-related services
 - Developed a digital healthcare system using PHP integrating AI for streamlined patient care, diagnostics, and medical record management
 - Time Series Lag Embedded Network (TLENET) for classification of honest and dishonest users in an energy consumption dataset
- Dimensionality Reduction**
- High dimensional energy consumption data is reduced in lower dimensions using Random Kitchen Sinks (RKS), emporal_LeNet, Wavelet Transform, Fast Food Transform, Nystroem Transform
- Data Balancing**
- Implementation of 85 variants of SMOTE like, LoRAS, ProWRAS, ADOMS, MCT for solving the problem of class imbalance.
- Optimization Algorithms**
- ML based classifiers Genetic Algorithm (GA), Gradient Descent, Stochastic Gradient Descent (SGD), Ant Colony Optimization (ACO), Hill Climbing, Particle Swarm Optimization, ADAM optimizer, Blue Monkey Optimizer, and Beeswarm optimizer is used for the optimization of DL algorithms
- Clustering Algorithms**
- ML based algorithms K-Means Clustering, Hierarchical Clustering, Agglomerative Clustering, and Self-Organizing Maps (SOM) is used for the optimization of DL algorithms

TECHNICAL SKILLS

- Programming Languages**
- PHP, LARAVEL, PYTHON, JAVA, C, C++
- Machine Learning Libraries**
- Scikit-learn, TensorFlow, PyTorch, Keras, Pandas, Numpy, SciPy, NLTK (Natural Language Toolkit), OpenCV, spaCy, H2O.ai
- Python Frameworks**
- Jupyter Notebooks, Kaggle Kernels, Google Colab, IBM Watson Studio, Azure Notebooks, , AWS SageMaker, DataCamp

RESEARCH INTEREST

- Domains**
- Data Science, Artificial Intelligence, Machine Learning, Deep Learning, Natural Language Processing

ACHIEVEMENTS

- 2021 Received Gold Medal from the University of Central Punjab (UCP), Lahore 54000, Pakistan.
- 2017-2021 Got a scholarship from the University of Central Punjab (UCP) , Lahore 54000, Pakistan for four years of BS (CS).
- 2023 Certificate of proficiency in English language from COMSATS University Islamabad, Islamabad 44000, Pakistan.

REFERENCES

- Prof. Dr. Nadeem Javaid Department of Computer Science, COMSATS University Islamabad, Islamabad 44000, Pakistan.
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- Associate Prof. Dr. Mariam Akbar Department of Computer Science, COMSATS University Islamabad, Islamabad 44000, Pakistan.
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