

Dr. Ayaz Hussain Bukhari

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https://www.researchgate.net/profile/Ayaz_Bukhari

Date of Birth. 27-08-1976

CNIC No.42201-6129386-5

Passport Number FD3343862



OBJECTIVE

Being a Professional person with dynamics personality to utilize excellent skills in research, administrative work, human resource management, training to handle multiple assignments as per ascertained priorities with effective presentation, verbal and written communication skills. Explore applied research and development work in Data Analysis and Computational Intelligence techniques and their application in social and physical sciences, utilizing skills for study chaotic behavior and uncertainty with help of fractional order artificial intelligence techniques

EDUCATION

2017 – 2020

PhD Applied Mathematics (3.56/4, 81%)

Advanced Operation Research, Metaheuristic Optimization, Fractional Calculus, Stochastic differential equations, Bío Mathematics
Abdul Wali Khan University Mardan, Pakistan

2010 - 2012

M Phil Applied Mathematic (3.44/4 ,73%)

Data Analysis I & II, Function Analysis, Dynamical Systems, Scientific Method of Urban Analysis, Functional Analysis, Topics in Algebra
Federal Urdu University Karachi, Pakistan

1999 - 2001

M Sc Applied Mathematic (80%)

Computer Programming, Numerical Analysis, Statistical Process, Linear Algebra, Statistical Process, Partial Differential Equations, Special functions, Analytical Dynamics, Topics in Analysis, Engineering Mechanics
University of Engineering and Technology Lahore, Pakistan

1995 - 1997

BSc Mathematics. Physics (71%)

University of the Punjab, Pakistan

WORK

12/2023- 12/2024

EXPERIENCE

- Machine Learning Consultant at QuantumTech 2023- Continue
09/2023- 12/2023
- Visiting AP Air University Islamabad
01/2021- 08/2022
- Visiting AP COMSATS University Attock
07/2018- 08/2021
- Education Manager PAC Kamra
09/2017 – 07/2018
- Deputy quality manager Air University Campus
01/2015 - 08/2017
- Assist Professor, Air University Islamabad.
11/2008 - 01/2015

- Assist Professor NUST
11/2004 - 11/2008
- Lecturer, Department of Applied Mathematics, NUST
09/2003 - 11/2004
- HOD Mathematics COE , Affiliated with NED UET Karachi
03/2001 - 01/2003
- Lecturer, Department of Mathematics University of Engineering and Technology, Lahore.

COMPUTATIONAL SKILLS

- Programming with R, Python, MATLAB, Maple, SPSS
- Statistical testing, and regression. Excellent understanding of machine learning algorithms, including k-NN, Naive Bayes, SVM, and Decision Forests, Cleaning, Merging, Reshaping, Analyzing, Presenting and interpretation of data, using advance softwares'

PROFESSIONAL COURSES/ WORKSHOPS

- Python for Scientific Calculation, Spatial Data Handling, and Remote Sensing, Institute of Space technology, Islamabad
- Data Analysis Techniques for Effective Decision Makings
- Basic to Advanced Bioinformatics, Genomics, Proteomics and NGS data analysis
- Machine learning & Deep learning techniques from Dice, International

INTERESTED FIELD

- Probability & Statistics
- Artificial Intelligence
- Machine Learning
- Data Mining
- Data Analysis and Visualization
- Time Series Analysis
- Financial Mathematics
- Linear Algebra
- Modelling of dynamic system
- Advance numerical solution of PDEs
- Fractional Calculus
- Operation Research
- Optimization Techniques
- Numerical solutions of Integral Equation

RESEARCH INTEREST

Key areas of my research interest are Data analysis, Algorithm designing , Deep learning modelling; Fractional Calculus, Fractional differential equation, Numerical Computing, Neural Networks, Techniques application to fractional order system in engineering

PUBLICATIONS

1. "Predictive analysis of stochastic Stock pattern utilizing fractional order dynamics and Heteroscedastic with a radial neural network framework" Engineering Applications of Artificial Intelligence(IF: 08)
<https://doi.org/10.1016/j.engappai.2024.108687>
<https://www.sciencedirect.com/science/article/abs/pii/S0952197624008455>
2. "Fractional neuro-sequential paradigm for parametrization modeling of Stock Exchange variables with Hybrid ARFIMA-LSTM". IEEE Access 2020 (347 Citations, IF: 4.09)
[Doi.10.1109/ACCESS.2020.2985763](https://doi.org/10.1109/ACCESS.2020.2985763)
<https://ieeexplore.ieee.org/document/9057460>

3. “Neuro fuzzy modeling and prediction of summer precipitation with application to different meteorological stations”. Alexandria Engineering Journal, 2019 (74 Citations, IF: 3.69)

[doi.org.10.1016/j.aej.2019.12.011](https://doi.org/10.1016/j.aej.2019.12.011)

<https://www.sciencedirect.com/science/article/pii/S1110016819301528>

4. “Design of hybrid NAR-RBFs neural network for dynamical analysis of nonlinear dusty plasma system”. Alexandria Engineering Journal, 2020 (97 Citations, IF: 3.69)

doi.org/10.1016/j.aej.2020.04.051

<https://www.sciencedirect.com/science/article/pii/S1110016820301927>

5. “A Stochastic Numerical Analysis Based on Hybrid NAR-RBFs Networks Nonlinear SITR Model for Novel COVID-19 Dynamics” Computer Methods and Programs in Biomedicine (142 Citations, Impact Factor 4.2)

[doi.org. 10.1016/j.cmpb.2021.105973](https://doi.org/10.1016/j.cmpb.2021.105973)

<https://pubmed.ncbi.nlm.nih.gov/33610034>

6. “A multimodal hybrid stochastic based deterministic ARFIMA Model” Waves in Random and Complex Media 2023

[doi.org 10.1080/17455030.2023.2186713](https://doi.org/10.1080/17455030.2023.2186713)

<https://www.tandfonline.com/doi/full/10.1080/17455030.2023.2186713>

7. “Fractional order Lorenz based physics informed SARFIMA-NARX model to monitor and mitigate megacities air pollution” Chaos Solitons & Fractals 2022 (30 Citations, IF: 10.41)

[doi.10.1016/j.chaos.2022.112375](https://doi.org/10.1016/j.chaos.2022.112375)

<https://www.sciencedirect.com/science/article/abs/pii/S0960077922005859>

8. “Dynamical analysis of nonlinear fractional order Lorenz system with a novel design of intelligent solution predictive radial base networks (15 Citations, IF: 3.06)

doi.org/10.1016/j.matcom.2023.06.005

<https://www.sciencedirect.com/science/article/abs/pii/S0378475423002483>

9. “Design of intelligent computing networks for nonlinear chaotic fractional Rossler system”. Chaos Solitons & Fractals 2022 (49 Citations, IF: 10.41)

[doi.org 10.1016/j.chaos.2022.111985](https://doi.org/10.1016/j.chaos.2022.111985)

<https://www.sciencedirect.com/science/article/abs/pii/S0960077922001953>

10. “Design of Intelligent Hybrid Nar-Grnn Paradigm for Fractional Order Vdp Chaotic System in Cardiac Pacemaker with Relaxation Oscillator”. Chaos Solitons & Fractals 2023 (IF: 10.41)

[doi.org.10.1016/j.chaos.2023.114047](https://doi.org/10.1016/j.chaos.2023.114047)

<https://www.sciencedirect.com/science/article/pii/S096007792300948>

WORKING PAPERS

Design of novel activation function ‘Bismoid’ based on exponential family classifier for efficient classification framework and its implication for cancer prognosis.

Design of data driven intelligence sustainable model for energy efficient

forecasting to adhere frequency fluctuation in decentralized power grid based on novel sigmoid activation function

Design of Novel algorithm for fintech fraud detection based on quantum computing and fractional calculus

Editorial Experience: Reviewing Scholarly Articles

- Elsevier Journal Engineering Applications of Artificial Intelligence
- American Journal of Applied Mathematics
- International Journal of Biomathematics
- International Journal of Machine Learning and Cybernetics

LANGUAGES

Urdu, Punjabi, English

PRIZES AND AWARDS

- President Talent Award in MSc Mathematics
- Best Faculty Award Air University in 2017

REFERENCES

1. Professor Muhammad Asif Zahoor, Future Technology Research Center, National Yunlin University of Science and Technology, 123 University Road, Section 3, Douliou, Yunlin Taiwan, R.O.C.

Email: rasifzahoor@hotmail.com

2. Assistant Professor Muhammad Shoaib Yuan Ze University, AI Center, Taoyuan, 320, Taiwan

Email: drm.shoaib@yahoo.com

3. Dr. Muhammad Uzair, Professor HOD Mathematic The University Of Lahore. Pakistan

Email: dr.uzairahmed@yahoo.com

Acknowledgment of My Literary Contributions in Books



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Python for Scientific Computing and Artificial Intelligence - Page 136

Stephen Lynch · 2023

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... Bukhari , A.H. , Raja , M.A.Z. , Sulaiman , M. et al . (2020) . Fractional neuro - sequential ARFIMA - LSTM for financial market forecasting . IEEE Access 8 (3) , 71326-71338 . [4] Cayssials , G. and Picasso , S. (2020) . The ...

1.



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Advances in Artificial Intelligence Application in Data ... - Page 271

Xin Ning, Imr Fattah, Praveen Kumar Donta · 2023

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... Bukhari , A. H. , Raja , M. A. Z. , Sulaiman , M. , Islam , S. , Shoaib , M. , and Kumam , P. (2020) . Fractional ... et al . (2022) . BiLSTM multitask learning - based combined load forecasting considering the loads coupling ...



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Mathematical Treatment of Nanomaterials and Neural Networks

Jia-Bao Liu, Muhammad Javaid, Shaohui Wang · 2021

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... **Bukhari AH, Raja MAZ**, Sulaiman M, Islam S, Shoaib M, Kumam P.
Fractional neuro-sequential ARFIMA-LSTM for financial market forecasting.
IEEE Access. (2020) 8:71326–38. doi: 10.1109/ACCESS.2020.2985763 21.
Pakdaman M, Ahmadian A, Effati ...