Dr Danish Mahmood Khan
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Address: House No. A-12, Sector 15-A/4, Scheme 33, Merchant Navy Officer's Co-operative Housing Society Ltd. Karachi Pakistan.
Google Scholar: https://scholar.google.com/citations?user=oOz6jgoAAAAJ&hl=en&oi=ao

RESEARCH INTERESTS

- **Brain Connectivity**
- **Electroencephalogram (EEG)**
- **Signal Processing**
- **Machine & Deep Learning Techniques**
- **BCI & Mental Disorders**
- **Image Processing & Computer Vision**

EXPERIENCE

WORKING EXPERIENCE: 14+ YEARS

Name of Institution	Position	Period	
		From	To
NED University of Engineering & Technology, Pakistan	Assistant Professor	July 2023	Till date
Universiti Teknologi PETRONAS, Malaysia	PG Research Student	July 2015	June 2021
NED University of Engineering & Technology, Pakistan	Senior Laboratory Engineer	March 2010	July 2023

TEACHING EXPERIENCE

- AI in Telecommunications
- Programming with C-language
- MATLAB
- Engineering Drawing and Workshop
- Digital Logic Design
- Computer & Programming (C++)
- Digital Signal Processing
- Communication Systems
- Image Processing & Computer Vision
- Signal & Systems

SESSION CHAIR

Chaired session on Artificial Intelligence in 2nd International Conference on Emerging Trends in Electronics and Telecommunications Engineering, 2023

COMMITTEE MEMBERSHIP

- Organizer of the International Conference on Technology Driven Climate Actions (CLIMATECH-2023)
- Member, Health Safety Environmental Committees at departmental level, NEDUET
- Team-lead for Logistics committee in 2nd International Conference on Emerging Trends in Electronics and Telecommunications Engineering, 2023

EDUCATION

PhD in Electrical & Electronic Engineering (26/08/2021)
Universiti Teknologi PETRONAS, Malaysia
Area of Specialization: Neuroscience, Signal Processing, Deep Learning
Thesis Title: Efficient effective connectivity in cortical default mode network for diagnosis of alcoholism

Masters in Telecommunications Engineering (31/12/2012)
NED University of Engineering and Technology, Karachi Pakistan
CGPA: 3.74/4.0
Independent Study Project: Recognition of activities taking place in kitchen by robots using image processing.

Bachelors in Telecommunications Engineering (31/12/2009)
NED University of Engineering and Technology, Karachi Pakistan
Percentage = 88.12 % Equivalent CGPA = 4.0/4.0
Senior Design Project: Target locking and tracking system

PUBLICATIONS

JOURNALS

- **Danish M. Khan**, Yahya N, Kamel N, Faye I. *A Novel Method for Efficient Estimation of Brain Effective Connectivity in EEG*. **Computer Methods and Programs in Biomedicine**. 2023 Jan 1; 228:107242. (JCR IF 2021 = 7.027)
- **Danish M. Khan,** K. Masroor, M. F. M. Jailani, N. Yahya, M. Z. Yusoff, and S. M. Khan, "*Development of wavelet coherence EEG as a biomarker for diagnosis of major depressive disorder*," **IEEE Sensors Journal**, vol. 22, no. 5, pp. 4315–4325, 2022. (Q2. JCR IF 2020 = 3.301)
- **Danish M. Khan**, Norashikin Yahya, Nidal Kamel, and Ibrahima Faye. "*Effective Connectivity in Default Mode Network for Alcoholism Diagnosis*," **IEEE Transactions on Neural Systems and Rehabilitation Engineering,** 29:796–808, 2021. (Q1. JCR IF 2019 = 3.34)
- **Danish M. Khan**, Norashikin Yahya, Nidal Kamel, and Ibrahima Faye. *Automated diagnosis of major depressive disorder using brain effective connectivity and 3d convolutional neural network*. **IEEE Access**, 9:8835–8846, 2021. (Q1. JCR IF 2019 = 3.745)
- **Danish M. Khan**, Nidal Kamel, Mustapha Muzaimi, and Timothy Hill. *Effective connectivity for default mode network analysis of alcoholism*. **Brain Connectivity**, 11(1):12–29, 2021. (Q1. JCR IF 2019 = 5.26)
- Muhammad Ahsan, Mohd Zuki, **Danish M. Khan**, Norashikin Yahya and Mansoor Ebrahim. *Effective Connectivity for Decoding Electroencephalographic Motor Imagery Using a Probabilistic Neural Network*. **Sensors**, 2021. (Q1. JCR IF 2020 = 3.576)
- M. W. Sabir, Z. Khan, N. M. Saad, **Danish M. Khan**, M. A. Al-Khasawneh, K. Perveen, A. Qayyum, and S. S. A. Ali, "*Segmentation of liver tumor in ct scan using resu-net*," **Applied Sciences**, vol. 12, no. 17, p. 8650,2022. (Q2. JCR IF 2021 = 2.838)
- A. Sadiq, M. I. Al-Hiyali, N. Yahya, T. B. Tang, and **Danish M. Khan**, "Non-oscillatory connectivity approach for classification of autism spectrum disorder subtypes using resting-state fMRI," **IEEE Access**, vol. 10, pp.14 049–14 061, 2022. (Q2. JCR IF 2020 = 3.367)

CONFERENCES

- **Danish M. Khan**, Norashikin Yahya, and Nidal Kamel. "*Optimum Order Selection Criterion for Autoregressive Models of Bandlimited EEG Signals*". In 2021, **IEEE-EMBS Conference on Biomedical Engineering and Sciences** (IECBES 2020).
- H Almahasneh, N Kamel, and **Danish M. Khan**. "*Variation in brain's effective connectivity due to driving using partial directed coherence*". In 2018**, IEEE International Conference on Automatic Control and Intelligent Systems (I2CACIS)**, pages 67–70. IEEE, 2018.

BOOK CHAPTER

- Aslam, F., Khan, Z., Tahir, A., Parveen, K., Albasheer, F. O., Ul Abrar, S., & **Khan, D. M.** (2022). *A Survey of Deep Learning Methods for Fruit and Vegetable Detection and Yield Estimation*. In **Big Data Analytics and Computational Intelligence for Cybersecurity** (pp. 299-323). Cham: Springer International Publishing.

EDITORIAL ACTIVITIES

- Editorial Board Member: Discover Psychology (Springer Nature)

PEER REVIEW FOR JOURNALS

- Nature - Translational Psychiatry (ISSN: 2158-3188)
- IEEE Transactions on Neural Systems and Rehabilitation Engineering (ISSN: 1534-4320)
- Springer Nature - BMC Neurology (ISSN: 1471-2377)
- Springer Nature - BMC Psychiatry (ISSN: 1471-244X)
- IEEE - Journal of Translational Engineering in Health & Medicine (ISSN: 2168-2372)
- IEEE - Access (ISSN: 2169-3536)
- T&F - Journal of Clinical and Experimental
- Nature – Scientific Reports (ISSN: 2045-2322)
- Springer Nature - BMC Public Health (ISSN: 1471-2458)
- Springer Nature - BMC Neuroscience (ISSN: 1471-2202)
- Springer Nature - BMC Medical Imaging (ISSN: 1471-2342)
- Mary Ann Liebert - Brain Connectivity (ISSN: 2158-0014)

Neuropsychology (ISSN:13803395)
- World Scientific- Biomedical Engineering-Applications Basis Communications (ISSN: 1016-2372)
- IOS Press - Technology and Health Care (ISSN: 0928-7329)
- PLoS One – (ISSN: 1932-6203)
- Springer Nature - BMC Child and Adolescent Psychiatry and Mental Health (eISSN: 1753-2000)
- IOS Press - Web Intelligence (ISSN: 2405-6456)

INVITED SPEAKER

- Brain Effective Connectivity using EEG Signals for Early Prediction of Epileptic Seizure, Asia Pacific Neuro-Biofeedback Conference Kuala Lumpur, Malaysia, 2017.
- Drug Addiction Severity Grading using Magnetic Resonance Spectroscopy, Workshop on Intelligent Signal and Imaging for Biomedical Applications, Kuala Lumpur, Malaysia, 2016.

PROFESSIONAL TRAININGS

- QEC Training Programme: Managing Health and Safety, NEDUET (18/07/2023)
- Training on OBE framework: Psychomotor Domain Assessment, NEDUET (06/06/2023)
- QEC Training Programme: Technical Computing using MATLAB, NEDUET (31/05/2023)
- Negotiation Skills, UTP, Malaysia (10/10/2018 – 11/08/2018)
- IP Awareness Program: What Every Researcher Should Know About Intellectual Property?, UTP, Malaysia (12/12/2018)
- Summer School on Biomedical Imaging 2017, Malaysia (18/09/2017 – 22/09/2017)
- Outcome-Based Education for Technologist & Graduate Assistant, Malaysia (20/08/2015)
- Discovery EEG Acquisition & Neurofeedback, Malaysia (27/07/2015 – 31/07/2015)

PROFESSIONAL CERTIFICATIONS

- *"Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization"* by DeepLearning.AI offered through Coursera (29/07/2023)
- *"Neural Networks and Deep Learning"*, by DeepLearning.AI offered through Coursera (20/06/2023)
- *"Python Functions, Files, and Dictionaries"*, by University of Michigan offered through Coursera (27/03/2023)
- *"Python Basics"*, by University of Michigan offered through Coursera (23/02/2023)

ACADEMIC HONORS & AWARDS

- Pakistan Engineering Council (PEC) registered engineer: TELE/02770.
- Higher Education Commission (HEC), Pakistan approved PhD supervisor for "Engineering and Technology". Registration Ref: HEC/HRD/ASA/2023/194254.
- Department's Best Postgraduate Student Award from Dean of Centre of Graduate Studies, Universiti Teknologi PETRONAS, Malaysia, 2021.

GRANTS & FUNDINGS

- Won Graduate Assistantship Scheme from Universiti Teknologi PETRONAS, Malaysia for PhD.
- Travel grant to present in IEEE International Conference on Automatic Control and Intelligent Systems (I2CACIS), Shah Alam, Malaysia.
- Travel grant to present in Asia Pacific Neuro-biofeedback Conference Kuala Lumpur, Malaysia, 2017.
- Travel grant to present Workshop on Intelligent Signal and Imaging for Biomedical Applications, Kuala Lumpur, Malaysia, 2016.
- Travel grant to attend 24th Annual Meeting and Exhibition of International Society for Magnetic Resonance in Medicine (ISMRM), Singapore. (07/05/2016 – 13/05/2016)
- IEEE Access publication funding from Yayasan Universiti Teknologi PETRONAS under Grant YUTP-FRG 015LC0-031 and Grant YUTP-FRG 015LC0-292.
- IEEE Transactions on Neural Systems and Rehabilitation Engineering publication funding from Yayasan Universiti Teknologi PETRONAS under Grant YUTP-FRG 015LC0-031 and Grant YUTP-FRG 015LC0-292.

RECENT SUPERVISING & MENTORING

- Condition Monitoring and Fault Prediction of Electric Motors (Co-Supervisor: PhD-In progress).
- Neurobiological Decoding of Motor Imagery through Network-Based Brain Mapping and Advanced Machine Learning Techniques (Co-Supervisor: PhD-In progress).
- Automated Diagnosis of Autism Spectrum Disorder using Deep Learning and Resting-State functional MRI Biomarkers (FYDP: In progress)
- A Deep Learning and Cloud Based IoT Integrated System for Decoding Speech Imagery EEG Signals (FYDP: In progress)
- Development of an EEG-Based Deep Learning Model for Automated Diagnosis of Depression: Unveiling Biomarkers for Effective Intervention (FYDP: In progress)
- Brainwave-Driven Robotics: Decoding Motor Imagery EEG Signals for Robotic Arm Control using Deep Learning (FYDP: In progress)
- Development of Emotion Detection Framework using EEG (Co-Supervised, Completed: 16/08/2023)

LANGUAGE SKILLS

- English: Read, Write, Speak, Understand
- Urdu: Read, Write, Speak, Understand
- Bahasa Melayu: Understand (Very Basic)

COMPUTER SKILLS

- MATLAB
- Python
- C/C++ language
- Microsoft Office
- EEGlab