



USMAN NAZIR


Data Scientist


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 Google Scholar Profile

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 Research Gate



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 usmanweb.github.io


 House # 241 CC, Sector D, Bahria Town Lahore, Pakistan.

Position: Postdoctoral Data Scientist - Climate and Health Analytics, NDORMS, University of Oxford


EDUCATION


(Split-site) PhD Computer Science
Lahore University of Management Sciences and University of Leeds
 Aug 2017 - May 2023  Pakistan and UK
Thesis: Efficient Techniques for Spatial and Spatio-temporal Analysis in Remote Sensing Data
Supervisors: Dr Murtaza Taj (LUMS) & Dr He Wang (University of Leeds)

MS Computer Networks CGPA: 3.57
Lahore University of Management Sciences (LUMS)
 2014 - 2016


Bachelor of Science in Telecommunication CGPA: 3.42
COMSATS University Islamabad(CUI)
 2008 - 2012

TEACHING EXPERIENCE

Assistant Professor of Computer Science, School of Computer and Information Technology (SCIT)
Beaconhouse National University
 Jan 2024 – July 2025

Trainer
SAMSUNG Innovation Campus
 Fall 2024

- Education for Future Generation - Data Science, Machine Learning and Deep Learning

Instructor
Knowledge Streams
 Summer & Fall 2023 (Evening session)

- Data Science and Machine Learning



Guest Lecturer in Deep Learning course
Lahore University of Management Sciences (LUMS)
 Spring 2023 & Fall 2022


- Convolutional Neural Network & Graph Neural Network Module


Lab Demonstrator (School of Geography)
University of Leeds
 Fall 2021  UK

- Retail Location Planning using QGIS


RESEARCH EXPERIENCE

Postdoctoral Data Scientist - Climate and Health Analytics,
NDORMS, University of Oxford
 August 2025  till now



Group Head
Center for AI Research, Beaconhouse National University
 March 2024 – July 2025

Research Associate (Center for Urban Informatics, Technology, and Policy)
CITY, LUMS
 Aug 2022 - Feb 2024

- Quality Inspection of Portable Cabins
- Learning Socio-economic Indicators from Remote Sensing Data
- Poverty Mapping
- Conducted workshop on ‘Damage Assessment’ using QGIS
- Tree Counting using Satellite Imagery (Published in IGARSS 2023)
- Flood 2022 Impacts using Satellite Imagery (Published in IGARSS 2023)

Research Studentship (A natural Moving2health experiment)
University of Oxford
 Summer 2022  UK

- Examine how changes in the environment (air pollution, green spaces, social environment, built environment) influence childhood health (Published in ICLR 2023, workshop)

Research Fellow (MODALES)
University of Leeds
 Fall 2021  UK

- Vehicle velocity profile optimization considering fuel consumption and NOx emissions

TEACHING EXPERIENCE (CONT.)

Lecturer (Department of Statistics and Computer Science)

University of Veterinary & Animal Sciences (UVAS)

📅 2016 - 2017

Lab Engineer (Digital Signal Processing Lab)

COMSATS University

📅 Spring 2014

Teaching Assistant

Lahore University of Management Sciences (LUMS)

📅 2019-2022

- High Performance Computing April 2022
- Hardware Architectures for AI Spring 2021
- Deep Learning Spring 2019
- Signal Processing & Computational Problem Solving Spring 2014

GRANTS RECEIVED

- 21,345 GBP on Women Empowerment for Small Scale Businesses from Digital Ocean. 2024
- 4685 GBP on Inflow and Outflow Transactions Dashboard from HBL. 2023
- 5000 GBP Research Support Grant at University of Leeds from Commonwealth Scholarship Commission (CSC). 2021

SELECTED PUBLICATIONS

- Projects Supervision:
 - M. A. Waseem, et al. Evaluating the Cooling Efficacy of Urban Green Spaces During Extreme Heat Events, IGARSS 2025.
 - H. M. Abubakar, et al. WasteSort-AI: Hybrid Deep Learning Pipeline for the Classification of Recyclable Materials, IGARSS 2025.
 - W. Sami, et al. Data-Driven Prediction of Malaria Outbreaks in Nigeria, IGARSS 2025.
 - R. Arbaz, et al. Mapping Air Pollution Sources with Sequential Transformer Chaining: A Case Study in South Asia, NeurIPS workshop 2024.
 - H. M. Abubakar, et al. 2022 Flood Impact in Pakistan: Remote Sensing Assessment of Agricultural and Urban Damage, AAAI Fall Symposium, 2024.
 - T. Fatima, et al. Data-Driven Approach to assess and identify gaps in healthcare set up in South Asia, ICONIP, 2024.
 - O. Ahmed, et al. Mending of Spatio-Temporal Dependencies in Block Adjacency Matrix, ICONIP, 2024.
- U. Nazir, et al. Predicting malaria outbreaks using earth observation measurements and spatio-temporal deep learning modelling: a South Asian case study from 2000 to 2017, The Lancet Journal 2024.
- U. Nazir, et al. 'Humanitarian costs of climate change: mapping the impact of extreme floods on population displacement and disruption to education and health using earth observation and data fusion', PHAM 2024

RESEARCH EXPERIENCE (CONT.)

Research Supervision (MS thesis)

TPI Lab, LUMS

📅 2020 - 2022

- Crops classification using satellite imagery
- Illegal kiln activity during SMOG period

Research Assistant (Inference and Protocol Design Team)

AdCom Lab, LUMS

📅 Aug 2012-Dec 2013

- Development of a localization algorithm, networking scheme & node deployment strategy for Safety Assurance in High Stress Environments (SAHSE)

TECHNICAL SKILLS

- **Geographic Information System (GIS)**
Tools: GEE, QGIS, ArcGIS
- **Programming Languages:** Python, C/C++
- **Frameworks:** Tensorflow, Keras, Scikit-learn, OpenCV, Matplotlib
- **Math Packages:** MATLAB, NumPy
- **Documentation:** LaTeX

WORKSHOPS & TRAININGS

- 2-Day Course Design Express by LUMS Learning Institute Jan 2024
- 4-Day International Training on "Bridging the Critical Data Gap-Sustainable Water Resources Management Using Satellite Radar Altimetry" Nov. 2022
- 5-Day Course Design Express by LUMS Learning Institute Sept. 2022
- "Pakistan's Global Graduates, Essential skills to get ready for a global educational platform" by UPSIGN June 2021 (UK Pakistan Science and Innovation Global Network)
- 5th Workshop on Precision Agriculture and Forestry, LUMS November 29, 2019
- Training Workshop on Earth Observation Applications in Agriculture, NARC 2018

PUBLICATIONS (CONT.)

- **U. Nazir**, et al. 'Predicting malaria outbreaks using earth observation measurements and spatio-temporal deep learning modelling: a South Asia case study from 2000 to 2017', PHAM 2024
- **U. Nazir**, et al. "Towards a spatio-temporal deep learning approach to predict malaria outbreaks using earth observation measurements in South Asia", NeurIPS 2023 Workshop on Tackling Climate Change with Machine Learning.
- **U. Nazir**, et al. "Spatio-temporal Graph Neural Networks with Block Adjacency Matrix (STAG-NN-BA)", AAAI Climate Change Symposium 2023.
- **U. Nazir**, et al., "Feature Selection on Sentinel-2 Multi-spectral Imagery for Efficient Tree Cover Estimation", IEEE IGARSS 2023.
- **U. Nazir**, et al., "Improved Flood Mapping For Efficient Policy Design By Fusion Of Sentinel-1, Sentinel-2 And Landsat-9 Imagery To Identify Population And Infrastructure Exposed To Floods", IEEE IGARSS 2023.
- **U. Nazir**, et al. "Mitigating climate and health impact of small-scale kiln industry using multi-spectral classifier and deep learning", In *Tackling Climate Change with Machine Learning workshop at ICLR 2023*
- **U. Nazir**, et al. "Kiln-Net: A Gated Neural Network for Detection of Brick Kilns in South Asia", In *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (J-STARS) 2020*
- **U. Nazir**, et al. "Tiny-Inception-ResNet-v2: Using Deep Learning for Eliminating Bonded Labors of Brick Kilns in South Asia", In *CVPR Workshop 2019, Long Beach, CA, USA*
- M.A. Bhimra, **U. Nazir** and M. Taj, "Using 3D Residual Network for Spatio-Temporal Analysis of Remote Sensing Data", In *IEEE, ICASSP 2019, Brighton, UK*
- **U. Nazir**, et al. "Accurate Localization Algorithm in Wireless Sensor Networks in the Presence of Cross Technology Interference", In *ICONIP 2019, Sydney, Australia*.

TRAINING WORKSHOPS DELIVERED

- Design Summit AI Hackathon at Beaconhouse National University (BNU) 9th March 2024
- Damage Assessment in QGIS at Lahore University of Management Sciences (LUMS) 2022
- Workshops on LaTeX for University of Veterinary and Animal Sciences (UVAS) Faculty (across Pattoki and Lahore Campuses) 2016

CERTIFICATIONS

- City Management Course by Atomcamp Nov-Dec 2022
- Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning by deeplearning.ai on Coursera 2019
- Convolutional Neural Networks by deeplearning.ai on Coursera 2019
- Structuring Machine Learning Projects by deeplearning.ai on Coursera 2019
- Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization by deeplearning.ai on Coursera 2019
- Neural Networks and Deep Learning by deeplearning.ai on Coursera 2018
- Discrete Time Signals and Systems on edX 2014

WORKSHOPS (CONT.)

- Hands-on Training workshop on Data Science CUI March 19-25, 2018
- Cloud Computing Workshop: Department of Computer Science, SBASSE, LUMS March 24-28, 2015
- 'Power of Positive Attitude' Training at PTCL Regional Telecom Training School (RTTS), Lahore, Pakistan Oct 2012

REFEREES

Dr Sara Khalid (Associate Professor)

@ University of Oxford

✉ sara.khalid@ndorms.ox.ac.uk

Relation: Current Employer [Director of Planetary Health Informatics Center at University of Oxford].

Dr Moeed W. Yusuf (Vice-Chancellor)

@ BNU

✉ moeedyusuf@bnu.edu.pk

Relation: Previous Employer [VC, Beaconhouse National University]

Dr. Momin Uppal (Associate Professor)

@ LUMS

✉ momin.uppal@lums.edu.pk

Relation: Previous Employer [Director of CITY at LUMS]

Dr Murtaza Taj (Associate Professor)

@ LUMS

✉ murtaza.taj@lums.edu.pk

Relation: PhD Advisor (LUMS)

Dr He Wang (Associate Professor)

@ University of Leeds

✉ h.e.wang@leeds.ac.uk

Relation: PhD Co-Advisor (University of Leeds)

Dr Muhammad Fareed Zaffar (Associate Professor)

@ LUMS

✉ fareed.zaffar@lums.edu.pk

Relation: MS Thesis Advisor.

AWARDS & SCHOLARSHIPS

- Nominee Category for the **Outstanding Contribution to Environmental Leadership** award at the Times Higher Education (THE) Awards Asia 2025, a prestigious platform recognizing excellence in higher education across Asia.
- Commonwealth Split-Site PhD Scholar at University of Leeds, UK (2020-2021)
- Won Facebook's Computer Vision for Global Challenges (CV4GC) (2019)
- Got full bright merit ICT Scholarship during four years of undergraduate studies from CIIT, Islamabad, Pakistan (2008-2012)

SCHOLARLY ENGAGEMENTS

- **Supervision - Final Year Projects:**
 1. CONVERSATE: Autonomous Call Management System
CONVERSATE Website
 2. POIs: Deep Feature Insights: Exploring Points of Interest
 3. PEER: Pre-Evaluated Efficiency Resources
 4. Predicting Global Burden of Disease (GBD) using Environmental Indicators IBDEM Website
 5. 'Making AI work for Everyone' in collaboration with 4xPillars, Germany 4xPillars Website
 6. Farmovation Solutions: Accelerating Technology adoption by Farmers Farmovation Website
- **Reviewer:**
 - The AMIA 2025 Annual Symposium
 - The 6th International Conference on Advancements in Computational Sciences (ICACS 2025)
 - The International Conference on Neural Information Processing (ICONIP), 2024
 - The International Conference on Learning Representations (ICLR), 2024
 - The International Conference on Learning Representations (ICLR), 2022
 - The International Conference on Neural Information Processing (ICONIP), 2019
- **Judge:** 1st International Research Assembly 2024, hosted by the Research Advisory Committee, Shalamar Medical and Dental College
- **Panelist:** Socratic Seminar 2024 on "*Should Chat-GPT be included as a co-author?*", hosted by the Research Advisory Committee, Shalamar Medical and Dental College
- **Panelist:** School of Tomorrow (SOT) 2024 conference "*Sustainability Reboot*", hosted by Beaconhouse School Systems (BSS)