

**Mirza Waleed**  
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## EDUCATION

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- 2022 Ph.D. Geography (Cont.) Hong Kong Baptist University, HK  
Dissertation: *Geospatial Modeling, Cloud Computing and Big Data Role in Flood Risk Assessment and Mitigation*  
Supervisor: Dr. Muhammad Sajjad & Prof. Gao Meng
- 2021 B.S. Environmental Science (RS & GIS) COMSATS University Islamabad, PK  
Thesis: *Evaluating the efficiency of coarser to finer resolution multispectral satellites (using GEE implementation) in mapping paddy rice fields for the Southern Punjab region.*

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## AWARDS, FELLOWSHIPS, GRANTS, AND HONORS

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- 01-2025 Selected as Google Developer Expert (GDE) by Google in the Google Earth Engine category for 2024-25. ([Link](#))
- 09-2024 Accepted as a visiting scholar at the King Abdullah University of Science and Technology (KAUST) in Saudi Arabia for six months.
- 08-2023 Selected as Google Developer Expert (GDE) by Google in the Google Earth Engine category for 2023-24. ([Link](#))
- 01-2023 Appointed as RPg Student Representative for Faculty of ARTS and SOSC at HKBU Hong Kong.
- 12-2022 2nd runner-up in Oral Poster Presentation, Hong Kong Geography Day 2022.
- 2022-2026 HKBU Ph.D. Fellowship (2022-2026, ~855,000 HK\$)
- 2017-2020 PM Laptop Scheme Scholarship - PK

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## RESEARCH INTERESTS

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- Remote Sensing and Geographic Information Systems
- Cloud Computing (Google Earth Engine) and Machine Learning
- Geospatial Data Science (open-source, Python-based)
- Disaster Management, Risk Assessment, and Floods
- Climate Change and Environmental Monitoring

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## ACCEPTED PAPERS

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2025

- Shiferaw, N., Habte, L., & **Waleed, M.** (2025). Land use dynamics and their impact on hydrology and water quality of a river catchment: A comprehensive analysis and future scenario. *Environmental Science and Pollution Research*. [DOI](#) - [PDF](#)
- **Waleed, M.**, & Sajjad, M. (2025). Advancing flood susceptibility prediction: A comparative assessment and scalability analysis of machine learning algorithms via artificial intelligence in high-risk regions of Pakistan. *Journal of Flood Risk Management*, 18(1), e13047. [DOI](#) - [PDF](#)

2024

- **Waleed, M.**, Sajjad, M., & Shazil, M. S. (2024). Urbanization-led land cover change impacts terrestrial carbon storage capacity: A high-resolution remote sensing-based nation-wide assessment in Pakistan (1990–2020). *Environmental Impact Assessment Review*, 105, 107396. [DOI](#) - [PDF](#)

2023

- **Waleed, M.**, & Sajjad, M. (2023). On the emergence of geospatial cloud-based platforms for disaster risk management: A global scientometric review of google earth engine applications. *International Journal of Disaster Risk Reduction*, 104056. [DOI](#) - [PDF](#)
- **Waleed, M.**, & Sajjad, M. (2023). Warming Cities in Pakistan: Evaluating Spatial–Temporal Dynamics of Urban Thermal Field Variance Index Under Rapid Urbanization. In *Climate Change and Cooling Cities* (pp. 67-82). Singapore: Springer Nature Singapore. [DOI](#) - [PDF](#)
- Yang, X., Yang, Q., Zhu, H., Wang, L., Wang, C., Pang, G., ... **Waleed, M.**, & Hussain, S. (2023). Quantitative Evaluation of Soil Water and Wind Erosion Rates in Pakistan. *Remote Sensing*, 15(9), 2404. [DOI](#) - [PDF](#)
- **Waleed M.**, Sajjad M., Shazil M.S., Tariq M., & Alam Md.T. (2023). Machine learning-based spatial-temporal assessment and change transition analysis of wetlands: An application of Google Earth Engine in Sylhet, Bangladesh (1985–2022), *Ecological Informatics*. [DOI](#) - [PDF](#)
- Sajjad M., Ali Z., & **Waleed M.** (2023). Has Pakistan learned from disasters over the decades? Dynamic resilience insights based on catastrophe progression and geo-information models, *Natural Hazards*. [DOI](#) - [PDF](#)

- **Waleed M., & Sajjad M. (2023)** *Warming Cities in Pakistan: Evaluating Spatial-temporal Dynamics of Urban Thermal Field Variance Index under Rapid Urbanization (Book Chapter in Springer)*
- Shafi A., Chen S., **Waleed M., and Sajjad M. (2023)**. *Leveraging machine learning and remote sensing to monitor long-term spatial-temporal wetland changes: Towards a national RAMSAR inventory in Pakistan, Applied Geography, Volume 151, 2023, 102868, ISSN 0143-6228. DOI - PDF*

2022

- **Waleed, M., Mubeen, M., Ahmad, A., Habib-ur-Rahman, M., Amin, A., Farid, H. U., ... & El Sabagh, A. (2022)**. *Evaluating the efficiency of coarser to finer resolution multispectral satellites in mapping paddy rice fields using GEE implementation. Scientific Reports, 12(1), 1-15. DOI - PDF*
- Hitouri, S., Varasano, A., Mohajane, M., Ijlil, S., Essahlaoui, N., Ali, S. A., **Waleed, M., ... & Teodoro, A. C. (2022)**. *Hybrid Machine Learning Approach for Gully Erosion Mapping Susceptibility at a Watershed Scale. ISPRS International Journal of Geo-Information, 11(7), 401. DOI - PDF*
- **Waleed, M., & Sajjad, M. (2022)**. *Leveraging cloud-based computing and spatial modeling approaches for land surface temperature disparities in response to land cover change: Evidence from Pakistan. Remote Sensing Applications: Society and Environment, 25, 100665. DOI - PDF*
- Sabagh, A. E., Islam, M. S., Hossain, A., Iqbal, M. A., Mubeen, M., **Waleed, M., ... & Abdelhamid, M. T. (2022)**. *Phytohormones as growth regulators during abiotic stress tolerance in plants. DOI - PDF*
- Hussain, S., Mubeen, M., Ahmad, A., Masood, N., Hammad, H. M., Amjad, M., ... & **Waleed, M. (2021)**. *Satellite-based evaluation of temporal change in cultivated land in Southern Punjab (Multan region) through dynamics of vegetation and land surface temperature. Open Geosciences, 13(1), 1561-1577 DOI - PDF*
- Balal, R. M., Shahid, M. A., Khan, N., Sarkhosh, A., Zubair, M., Rasool, A., **Waleed, M., ... & Nasim, W. (2022)**. *Morphological, Physiological, and Biochemical Modulations in Crops under Salt Stress. In Building Climate Resilience in Agriculture (pp. 195-210). Springer, Cham. DOI - PDF*

2021

- Sabagh, A. E., Islam, M. S., Iqbal, M. A., Hossain, A., Mubeen, M., Jabeen, T., **Waleed, M., ... & Fahad, S. (2021)**. *Salinity Stress in Cotton: Adverse Effects, Survival Mechanisms and Management Strategies. In Engineering Tolerance in Crop Plants Against Abiotic Stress (pp. 59-80). CRC Press. DOI - PDF*

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**PAPERS IN PREPARATION OR UNDER REVIEW**

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## Submitted Papers

- *Integrating machine learning, explainable-AI, and geospatial tools for high-resolution flood susceptibility and exposure assessment*

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## PRESENTATIONS

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**Waleed, M.**, Oral Poster Presentation on Hong Kong Geography Day 2022. Got the 2nd runner-up position. Presented topic: “*Urban Growth and Thermal Field Variance: Exploration and Prediction using Remote Sensing, Machine Learning and Geo-information Modelling*”.

**Waleed, M.**, Presented a lecture at COMSATS University Islamabad, Vehari campus in Dr. Mubeen’s undergraduate class (ENV362). Lecture theme: “*Introduction to GEE & hands on unsupervised classification*”.

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## TEACHING EXPERIENCE

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### Teaching Assistant (PhD)

GEOG4027 Geography of Environmental Hazards - 2024  
GEOG3025 Population Geography - 2023  
GEOG3015 Geography of Health and the Environment - 2023

### Udemy (Online Courses)

2022 June – Udemy Instructor  
Topic: Remote Sensing using ArcGIS Pro ([link](#))  
2022 April – Udemy Instructor  
Topic: Remote Sensing – Fundamentals and Applications ([link](#))  
2022 March– Udemy Instructor  
Topic: Introduction to Google Earth Engine (GEE) ([link](#))

### COMSATS University Islamabad, Vehari campus, Pakistan

#### Invited Guest Lectures

2020 October – ENV362  
Topic: Introduction to Google Earth Engine for Geospatial Applications  
2019 February – ENV362  
Topic: Remote Sensing and GIS (Introduction to ArcGIS products)

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## PROFESSIONAL SERVICE

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### Reviewer in Peer-review Journals

[Remote Sensing of Environment](#)

[Natural Hazards](#)

[Progress in Disaster Science](#)

[Earth Science Informatics](#)

[IEEE Sensors Journal](#)

[Environmental Monitoring and Assessment](#)

[Environmental Earth Sciences](#)

[Applied Geography](#)

[Geo-spatial Information Science](#)

[Theoretical and Applied Climatology](#)

[International Journal of Digital Earth](#)

[International Journal of Disaster Risk Reduction](#)

[Environmental Systems Research](#)

[Remote Sensing Applications: Society and Environment](#)

[Egyptian Journal of Remote Sensing and Space Sciences](#)

[Geocarto International](#)

### Geospatial Freelancer Services

2020-To Date      Freelancer on Fiverr since 2020. Provides Earth Engine based consultancy services ([Link](#)).  
Completed ~34 projects (5/5 ratings each)

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## CERTIFICATES AND WORKSHOPS

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- Jan-25            Greening the Giga: Advancing Sustainability in Saudi Arabia at King Abdullah University of Science and Technology (KAUST) KSA - Workshop, Physical Attended and managed as a team member.
- Aug-23            Selected as Google Developer Expert (GDE) in Earth Engine category. ([Link](#))
- Mar-23            2nd Runner-up position in Poster Presentation at the University of Hong Kong. ([Link](#))
- Dec-21            Duolingo English Test (DET) – [English Proficiency Test](#)  
Passed DET with 136 out of 160 marks (equal to IELTS 8-bands)
- Oct-21            Oxford School of Climate Change, Oxford Climate Society - Course
- Jun-21            Recent threats to the environment and role of remote sensing in environmental management - Workshop
- Apr-21            GeoPython 2021 International Conference - Conference
- Feb-21            Machine Learning Specialization, University of Stanford - Andrew Ng - Course
- Feb-21            Big Data Analysis for Water-related Applications, UN University Institute for Water Env. and Health - Course
- Jan-21            Spatial Analysis and Satellite Imagery in a GIS, University of Toronto Coursera - Course
- Jan-21            Python Programming Certification, Udemy – Course
- Nov-20            Discovering the world through GIS, Ministry of KP Pakistan – Workshop