Mirza Waleed

Ph.D. Candidate in Geography | **Google Developer Expert (Earth Engine)**
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Professional Summary

Ph.D. candidate in Geography (HKBU) and Google Developer Expert (Earth Engine) specializing in GeoAI for flood risk assessment. I integrate satellite remote sensing (SAR/optical), geospatial data engineering, and scalable machine learning to produce high-resolution environmental products—flood hazard/susceptibility/exposure, land cover, urban heat stress, and carbon storage. I build reproducible end-to-end pipelines that harmonize multisensor data, train spatially aware models, and deploy inference on cloud/HPC platforms (Google Earth Engine; Shaheen/Slurm). As a visiting scholar at KAUST, my research advances model–data fusion, explainability, and uncertainty quantification to improve transferability across diverse hydro-climatic settings. I publish actively, release open tools, deliver community training, and collaborate with stakeholders to translate analytics into policy-relevant insights.

Research Interests

- Flood risk analytics: hazard, susceptibility, and exposure
- SAR–optical fusion and spatiotemporal feature engineering
- Spatial machine learning/GeoAI: explainability, robustness, model–data fusion
- Cloud/HPC geospatial workflows (GEE, Slurm) and scalable data engineering
- Climate and urban environmental change: heat stress and carbon dynamics

Education

Ph.D., Geography (ongoing) — Hong Kong Baptist University, Hong Kong (2022–)
Dissertation: Geospatial Modeling, Cloud Computing and Big Data Role in Flood Risk Assessment and Mitigation
B.S., Environmental Science (RS & GIS) — COMSATS University Islamabad, Pakistan (2021)

Appointments & Leadership

Visiting Scholar, King Abdullah University of Science and Technology (KAUST), Saudi Arabia (2024–2025)
RPg Student Representative, Faculty of Arts & SOSC, HKBU (2023)

Awards & Distinctions (selected)

- **HOT PAPERS (Top 0.1%)**, HKBU Research Office — Flood susceptibility assessment (Aug 2025)
- **HOT PAPERS (Top 0.1%)**, HKBU Research Office — Land cover & carbon storage in Pakistan (Jun 2025)
- **Google Developer Expert (Earth Engine)** — 2023–2025
- **Ph.D. Fellowship**, HKBU (2022–2026, ~HK$855,000)
- **2nd Runner-up**, Oral Poster, Hong Kong Geography Day (2022)

Selected Publications (7 of 20+)

1. **Waleed, M.**, & Sajjad, M. (2025). High-resolution flood susceptibility mapping and exposure assessment in Pakistan: An integrated AI/ML and geospatial framework. *Int. J. Disaster Risk Reduction*, 121, 105442. DOI | PDF

2. **Waleed, M.**, & Sajjad, M. (2025). Advancing flood susceptibility prediction: A comparative assessment and scalability analysis of ML algorithms in high-risk regions of Pakistan. *Journal of Flood Risk Management*, 18(1), e13047. DOI | PDF

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

4. **Waleed, M.**, & Sajjad, M. (2023). Geospatial cloud platforms for disaster risk management: A global scientometric review of Google Earth Engine applications. *Int. J. Disaster Risk Reduction*, 104056. DOI | PDF

5. **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). Springer. DOI | PDF

6. **Waleed, M.**, Sajjad, M., Shazil, M. S., Tariq, M., & Alam, Md. T. (2023). ML-based spatial-temporal assessment and change transition of wetlands: GEE application in Sylhet, Bangladesh (1985–2022). *Ecological Informatics*. DOI | PDF

7. **Waleed, M.**, & Sajjad, M. (2022). Cloud-based spatial modelling of LST disparities under land cover change in Pakistan. *Remote Sensing Applications: Society and Environment*, 25, 100665. DOI | PDF

Full list: https://waleedgeo.com/publication OR GoogleScholar

Teaching & Mentorship

- **Teaching Assistant (HKBU):** GEOG4027 Geography of Environmental Hazards (2024); GEOG3025 Population Geography (2023); GEOG3015 Geography of Health & Environment (2023)
- **Workshops/Talks:** Summer School (Punjab Univ., 2025) — *Flood Inundation Mapping with GEE Python & Spatial Analysis*
- **Udemy (Instructor, 2022):** *Remote Sensing using ArcGIS Pro*; *Remote Sensing—Fundamentals & Applications*; *Introduction to GEE*

Professional Service

- **Reviewer** (selected): *Remote Sensing of Environment; Science of the Total Environment; Natural Hazards; Applied Geography; Int. J. Disaster Risk Reduction; Geo-spatial Information Science; Environmental Monitoring & Assessment; Environmental Earth Sciences; Theoretical & Applied Climatology; Int. J. Digital Earth; Remote Sensing Applications: Society & Environment; Geocarto International; IEEE Sensors Journal.*
- **Community:** Google Developer Expert (Earth Engine), 2023–2025 — Talks, mentorship, code samples.

Consulting

Geospatial Freelancer (Fiverr), 2020–present — Earth Engine consultancy; ~34 projects, 5/5 ratings. Profile: https://www.fiverr.com/waleed_gis

Certifications & Training (selected)

- **Shaheen Supercomputing Workshop (KAUST):** Oct 2024
- **Duolingo English Test:** 136/160 (IELTS ~8 bands) (2021)
- **Machine Learning Specialization (Andrew Ng):** 2021
- **UN-INWEH Big Data for Water:** 2021
- **Oxford School of Climate Change:** 2021

References

Available upon request.