

Akhtar Alam, PhD

Sr. Assistant Professor (Disaster Management)
Department of Geography and Disaster Management
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Having core interest in spatial science, I explore earth surface processes and try to understand the interplay of natural and social environment at varied spatial scales. My current projects encompass study of environmental change, geomorphology, natural hazards, disaster risk, and climate crisis. Application of Earth Observation (EO) satellite data, Geographic Information System (GIS), Global Positioning System (GPS) and simulation modeling is central to my work.

Recently, I worked as Physical Science Research Fellow in Conflict, Disaster and Migration at the Institute for Risk and Disaster Reduction (IRDR), University College London (UCL), United Kingdom for a period of two years, 2019 – 2021 in a project supported by the Royal Society (CHL\R1\180288). My role in the project was to use satellite remote sensing and modeling approaches to track the complex issues that arise from natural hazards in developing nations.

Educational Qualifications

- PhD in Geography (2011), JMI, New Delhi, India
- PGD in Remote Sensing and GIS (2006), University of Kashmir, Srinagar, India
- Masters in Geography (2004), University of Kashmir, Srinagar, India

Relevant Work Experience

- Assistant Professor (March 2017 – Present) of Disaster Management in the Department of Geography and Disaster Management, University of Kashmir, India
- Postdoctoral Research Fellow (Feb 2019 – Feb 2021) in Royal Society sponsored research project at the Institute for Risk and Disaster Reduction, University College London (UCL), UK

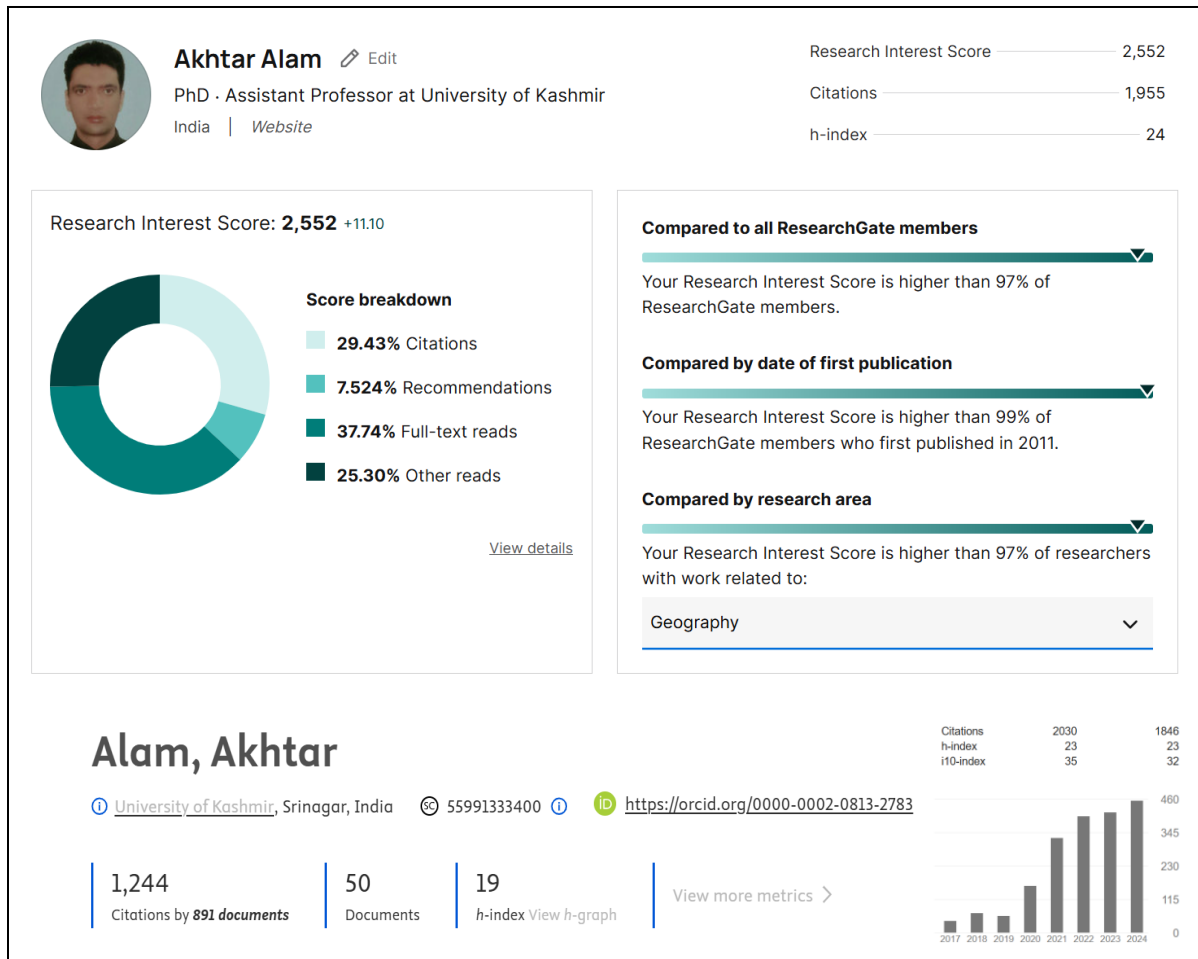
Completed Research Projects

- Multi-hazard hurricane and epidemic risk assessment for a small Caribbean Island developing state (Dominica). GCRF-UCL Internal Small Grants, United Kingdom; [Role: Co-PI]
- Flood hazard evaluation and vulnerability assessment of the Upper Jhelum floodplain in the Kashmir Valley (2015-2018), supported by Ministry of Earth Sciences (MoES), Government of India; [Role: Co-PI]
- Assessing cropping pattern and food security scenario of the Jammu and Kashmir (2016-2019), funded by the Indian Council of Social Science Research (ICSSR), Government of India; [Role: Co-PI]
- Climate and Land Use / Land Cover (LULC) changes: Threats to Himalayan Biodiversity (2016- 2021), sponsored by the University Grants Commission (UGC), Government of India; [Role: Co-coordinator]

Current Research Projects

- Rainfall threshold-based landslide early warning system for the Kashmir Himalaya (2024), shortlisted for support by Ministry of Earth Sciences (MoES), Government of India; [Role: PI]
- Changing climate and snow avalanche activity in the Kashmir Himalaya (2024), submitted to Ministry of Earth Sciences (MoES), Government of India; [Role: PI]

Research Indices



Selected Publications

- **Alam A.** Bhat M. S., Ahsan S., Taloor A. K., H. Farooq (2024). Earth observation satellite data-based assessment of wetland dynamics in the Kashmir Himalaya. Environmental Monitoring Assessment 196, 32, <https://doi.org/10.1007/s10661-023-12185-7>
- Sammonds P., **Alam A.**, Day S., Stavrianaki K. and Kelman I. (2023). Hurricane risk assessment in a multi-hazard context for Dominica in the Caribbean. Scientific Reports, <https://www.nature.com/articles/s41598-023-47527-5>

- Shah B., Bhat M. S., **Alam A.**, Ahsan S., Ali N., Sheikh H. A. (2023) Natural Hazards. Establishing the landslide-triggering rainfall thresholds for the Kashmir Himalaya. <https://doi.org/10.1007/s11069-023-06254-w>
- **Alam A.**, Ahmed B., Sammonds P., Kamal A. S. M. M. (2023). Applying rainfall threshold estimates and frequency ratio model for landslide hazard assessment in the coastal mountain setting of South Asia. *Natural Hazards Research*; <https://doi.org/10.1016/j.nhres.2023.08.002>.
- Shah B., **Alam A.**, Bhat M. S., Ahsan S., Ali N., Sheikh H. A (2023). Extreme precipitation events and the landslide activity in the Kashmir Himalaya. *Bulletin of Engineering Geology and the Environment*. <https://doi.org/10.1007/s10064-023-03350-w>
- Ismail M., Singh H., **Alam A.**, Farooq I. (2023). Assessment of livelihood development and diversity as a strategy to cope with livelihood vulnerability in Leh, India: a PCA-based approach. *Environment Development and Sustainability*. <https://doi.org/10.1007/s10668-023-04010-5>
- Wani M. S., Bhat M. S., **Alam A.**, Ahsan H., Mir S., (2023). Quantifying the Tourism Potential of North-Western Himalayas: A Comparative Analysis of Sonamarg and Doodhpathri, India. *Journal of Quality Assurance in Hospitality and Tourism*. <https://doi.org/10.1080/1528008X.2023.2270631>
- Sheikh H. A., Bhat M. S., **Alam A.**, Ahsan S., Shah B. (2023). Evaluating the drivers of groundwater spring discharge in Sindh basin of Kashmir Himalaya. *Environment Development and Sustainability*. <https://doi.org/10.1007/s10668-023-03700-4>
- Sheikh H. A., Bhat M. S., **Alam A.**, Ahsan S., Shah B. (2023). Modeling runoff responses to 1.5 °C and 2 °C rise in temperature in snow-fed basin of western Himalayas. *Sustainable Water Resources Management*, <https://link.springer.com/article/10.1007/s40899-023-00910-6>
- Mattoo D., Mir S.A., Bhat M.S., **Alam A.**, Rafique N. (2023). Modelling the Impact of Climate Variability and LULC Changes on the Hydrological Processes in the Upper Jhelum Basin Catchment, Western Himalayas. *Water Resources* 50, 215– 230, <https://doi.org/10.1134/S0097807823020057>
- Taloor A. K., Kothiyari G. C., Dumka R. K., **Alam A.**, Malik K. (2023). Crustal deformation study of Kashmir basin: Insights from PSInSAR based time series analysis. *Journal of Applied Geophysics*. 211, <https://doi.org/10.1016/j.jappgeo.2023.104979>
- Shah B., Bhat M. S., **Alam A.**, Sheikh H. A., Ali N. (2023). Impact of urban growth on the natural drainage network of the Srinagar city, *Urban Water Journal*, DOI: 10.1080/1573062X.2022.2164733

- Ahsan S., Bhat M.S., **Alam A.**, Sheikh H. A., Farooq H. (2023). Hydrological extremes and climatic controls on streamflow in Jhelum basin, NW Himalaya. *Theor Appl Climatol*. <https://doi.org/10.1007/s00704-022-04346-4>
- Ahsan S., Bhat, M. S., **Alam A.**, Farooq H., Sheikh H. A. (2022). Complementary use of multi-model climate ensemble and Bayesian model averaging for projecting river hydrology in the Himalaya. *Environ Sci Pollut Res*. <https://doi.org/10.1007/s11356-022-24913-6>
- Sheikh H.A., Bhat M.S., **Alam A.**, Ahsan A. Shah B. (2022). Assessing the groundwater spring potential of Sindh basin in the Kashmir Himalaya. *Arab J Geosci* 15, 1710, <https://doi.org/10.1007/s12517-022-10965-y>.
- Shah B., Bhat M S., **Alam A.**, Ali N. (2022). Developing landslide hazard scenario using the historical events for the Kashmir Himalaya. *Nat Hazards* 114, 3763–3785 (2022). <https://doi.org/10.1007/s11069-022-05542-1>
- Ali, N., **Alam A.**, Bhat, M.S., Shah B. (2022). Using historical data for developing a hazard and disaster profile of the Kashmir valley for the period 1900–2020. *Nat Hazards* 114, 1609–1646, <https://doi.org/10.1007/s11069-022-05440-6>
- Wani, M.S., Bhat M.S., **Alam A.**, Mir S. A (2022). Assessing indigenous community's perspectives and attitudes toward tourism development impacts in the northwestern Himalayas, India. *Socio Ecol Pract Res*. <https://doi.org/10.1007/s42532-022-00134-6>
- Ahsan S., Bhat M. S., **Alam A.**, Farooq H., Shiekh H. A. (2021). Evaluating the impact of climate change on extreme temperature and precipitation events over the Kashmir Himalaya. *Climate Dynamics*. DOI: 10.1007/s00382-021-05984-6
- Ahsan S., Bhat M. S., **Alam A.**, Ahmed N., Farooq H., Ahmad B (2021). Assessment of trends in climatic extremes from observational data in the Kashmir basin, NW Himalaya. *Environmental Monitoring and Assessment* 193:649 <https://doi.org/10.1007/s10661-021-09439-7>.
- Ahmad B., **Alam A.**, Bhat M. S., Bhat K. A., Haq J. I., Farooq H., Qadir J. (2021). Retracing Realistic Disaster Scenarios from Archival Sources: A Key Tool for Disaster Risk Reduction. *International Journal of Disaster Risk Science*, DOI: 10.1007/s13753-021-00363-5
- **Alam A.**, Ahmed B., Sammonds P., (2020). Flash flood susceptibility assessment using the parameters of drainage basin morphometry in SE Bangladesh. *Quaternary International* <https://doi.org/10.1016/j.quaint.2020.04.047>
- Taloor A. K., Joshi L. M. Kotlia B. S., **Alam A.**, Kothiyari G. C., Kandregula R. S., Singh A. K., Dumka R. K. (2020). Tectonic imprints of landscape evolution in the Bhilangana and Mandakini basin, Garhwal Himalaya, India: A geospatial approach. *Quaternary International*. <https://doi.org/10.1016/j.quaint.2020.07.021>

- Juan A. B-C, Koul T., Ahmad B., Pozo J. M. B., Allen S., Guillet S., Rashid I., Alamgir S. H., Shah M., Bhat M. S., **Alam A.**, Stoffel M. (2020). Recent flood hazards in Kashmir put into context with millennium-long historical and tree-ring records. *Science of The Total Environment*, 722, 137875, <https://doi.org/10.1016/j.scitotenv.2020.137875>
- **Alam A.**, Sammonds P., Ahmed B. (2019). Cyclone Risk Assessment of the Cox's Bazar and Rohingya Refugee Camps in southeast Bangladesh. *Science of the Total Environment*, 704, 135360, <https://doi.org/10.1016/j.scitotenv.2019.135360>
- **Alam A.**, Bhat M.S. and Maheen M (2019). Using Landsat satellite data for assessing the land use and land cover change in Kashmir valley. *GeoJournal*, <https://doi.org/10.1007/s10708-019-10037-x>.
- Qadir J., Bhat M.S., **Alam A.** and Rashid I. (2019). Mapping groundwater potential zones using remote sensing and GIS approach in Jammu Himalaya, Jammu and Kashmir. *GeoJournal* (2019). <https://doi.org/10.1007/s10708-019-09981-5>
- Bhat M.S., **Alam A.**, Ahmad, S., Farooq H., Ahmad B. (2019). Flood hazard assessment of upper Jhelum basin using morphometric parameters. *Environ Earth Sci* 78, 54 <https://doi.org/10.1007/s12665-019-8046-1>
- Bhat M.S., Ahmad B., **Alam A.**, Farooq H., Ahmad S. (2019). Flood hazard assessment of the Kashmir Valley using historical hydrology. *Journal of Flood Risk Management*. 12 (Suppl. 1):e12521.<https://doi.org/10.1111/jfr3.12521>
- **Alam A.**, Bhat M. S., Ahmad B., Farooq H., Ahmad S., Sheikh A. H. (2018). Flood risk assessment of Srinagar city in Jammu and Kashmir, India. *International Journal of Disaster Resilience in the Built Environment*, 9, 2, DOI 10.1108/IJDRBE02-2017-0012
- Bhat M.S., **Alam A.**, Ahmad B., Kotlia B.S., Farooq H., Taloor A.K., Ahmad S. (2018). Flood Frequency Analysis of River Jhelum in Kashmir. *Quaternary International*, 507, 288-294, <https://doi.org/10.1016/j.quaint.2018.09.039>
- Taloor A.K., B.S., Jasrotia A.J., Kumar A., **Alam A.**, Ali S. Kouser B., Garg P.K., Kumar R., Singh A.K.Singh B., Jasrotia R. (2018). Tectono-climatic influence on landscape changes in the glaciated Durung Drung basin, Zaskar Himalaya, India: A geospatial approach. *Quaternary International*, 507, 262-273, <https://doi.org/10.1016/j.quaint.2018.09.030>
- **Alam A.**, Bhat M. S., Kotlia B. S., Ahmad B., Ahmad S., Taloor A. K., Ahmad H. F. (2017). Coexistent pre-existing extensional and subsequent compressional tectonic deformation in the Kashmir basin, NW Himalaya. *Quaternary International*, 444, 201-208, doi:10.1016/j.quaint.2017.06.009
- **Alam A.**, Bhat M. S., Kotlia B. S., Ahmad B., Ahmad S., Taloor A. K., Ahmad H. F. (2018). Hybrid tectonic character of the Kashmir basin: Response to comment on "Coexistent pre-existing extensional and subsequent compressional tectonic deformation in the Kashmir basin, NW Himalaya (Alam et al., 2017)" by Shah (2017). *Quaternary International*, 468 284-289. doi.org/10.1016/j.quaint.2018.02.010.

- Taloor A.K., Ray P. K. C., Jasrotia A. S., Kotlia B.S., **Alam A.**, Kumar S. G., Kumar R., Kumar V., Roy S. (2017). Active tectonic deformation along reactivated faults in Binta basin in Kumaun Himalaya of north India: Inferences from tectonogeomorphic evaluation. *Zeitschrift für Geomorphologie*, 61, 2.
- Ahmad B., **Alam A.**, Bhat M. S., Ahmad S., Shafi M., Rasool R. (2016). Seismic Risk Reduction through Indigenous Architecture in Kashmir Valley. *International Journal of Disaster Risk Reduction*, 21, 110-117, doi: 10.1016/j.ijdr.2016.11.005
- Ahmad B., Ahmad S., **Alam A.** Wang S., Bhat M. S., (2015). Looking for missing links in Kashmir: an update on nineteenth century Seismicity. *Seismological Research Letters*, 86 4, doi: 10.1785/0220140105
- **Alam A.**, Ahmad S., Bhat M. S, Ahmad Bashir., (2015). Tectonic evolution of Kashmir basin in northwest Himalayas. *Geomorphology* 239 114-126, doi: 10.1016/j.geomorph.2015.03.025
- Ahmad B., Sana H., **Alam A.** (2014). Macroseismic intensity assessment of 1885 Baramulla Earthquake of northwestern Kashmir Himalaya, using Environmental Seismic Intensity Scale (ESI 2007). *Quaternary International*, 321 59-64, doi: 10.1016/j.quaint.2013.12.043
- Ahmad S., **Alam A.**, Ahmad B., (2015). Comment on: "Earthquake geology of Kashmir Basin and its implications for future large earthquakes" by Shah (2013). "Kashmir Basin Fault and its tectonic significance in NW Himalaya, Jammu and Kashmir, India" by Shah (2015). *International Journal of Earth Sciences*, DOI 10.1007/s00531-015-1240-9
- **Alam A.**, Ahmad S., Bhat M.S., Ahmad B. (2015b). Response to the comment by Shah, A. A. (2015) and further evidence supporting the dextral strike-slip pull-apart evolution of the Kashmir basin along the central Kashmir fault (CKF). *Geomorphology* doi: 10.1016/j.geomorph.2015.06.017
- Latief S. U., Naqvi H. R., **Alam A.** Amin A. (2015). Morphometric Analysis of East Lidder watershed, Northwestern Himalayas. *SSARSC International Journal of Geo-Science and Geo-Informatics*, 2,1
- Ahmad B., **Alam A.**, Ahmad B., Bhat M. I., Bhat M. S. (2015). Geomorphic evidence of unrecognized Balapur fault segment in the southwest Kashmir basin of northwest Himalayas. *Geomorphology*, 250, 159- 172, <https://doi.org/10.1016/j.geomorph.2015.09.006>
- Ahmad B., Ahmad K., **Alam A.** Bhat M. S. (2012). Reconstructing Past Climate and Natural Disasters in Kashmir Valley: Using Historical Evidence as Climate Proxies. *Journal of South Asia Disaster Studies* 5, 1 & 2
- Sheikh A. H. Palria S., **Alam A.** (2011). Integration of GIS and Universal Soil Loss Equation (USLE) for Soil Loss Estimation in a Himalayan Watershed. *Recent Research in Science and Technology*, 3, 3

- **Alam A.**, Rashid S.M., Bhat M. S., Sheikh A. H. (2011). Impact of land use/land cover dynamics on Himalayan wetland ecosystem. Journal of Experimental Sciences, 2, 3, 60-64
- **Alam A.**, Romshoo S.A., Bhat M. S. (2011). Estimation of Snowmelt Runoff Using Snowmelt Runoff Model (SRM) in a Himalayan Watershed. World Journal of Science and Technology, 1(9):37-42

Books

Bayes Ahmed and **Akhtar Alam** (2022). Remote Sensing of Natural Hazards. ISBN: 978-3-0365-4308-6 (Hbk), MDPISt. Alban-Anlage 664052 Basel, Switzerland, (Edited).

Review Assignments

Reviewed more than 300 articles received from the journals of acclaimed publishers such as Elsevier, Springer, Taylor and Francis, Wiley etc.

Membership of Scientific Societies

Life member: Indian Society of Geomatics (ISG)

Life member: Indian Institute of Geomorphologists (IGI)

Member: International Society for Environmental Information Science (ISEIS)

PhD Research Supervisions

Student	Date of registration	Status
Tahir A. Wani	18-04-2022	Pursuing
Taha Shamim	12-12-2019	Pursuing
Noureen Ali	16-02-2019	Submitted
Bilquis Shah	11-12-2018	Awarded
Nahida Yousuf	04-12-2018	Pursuing
Rabby ul Qalab	04-12-2018	Pursuing
Mujtaba Ismail	13-05-2017	Pursuing
Shafkat Ahsan	13-05-2017	Awarded

Administrative Assignments

- Coordinator International Admissions, University of Kashmir
- Coordinator Research, Department of Geography and Disaster Management, University of Kashmir
- Coordinator Sports and Cultural Activities, Department of Geography and Disaster Management, University of Kashmir
