

Tarak Aziz

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EXPERT PROFILE

Geospatial and disaster risk specialist and 2026 Esri Special Achievement in GIS (SAG) Award recipient, with interdisciplinary expertise in GIS, remote sensing, Earth observation, climate resilience, disaster risk reduction, and humanitarian decision support. Brings professional and research experience across the United States and Bangladesh and holds dual master's degrees in Geography/GIScience and Disaster Management. Experience includes humanitarian Earth observation, flood and coastal risk assessment, sea-level-rise analysis, multi-hazard risk assessment, policy-oriented research, and geospatial capacity building. Skilled in translating spatial and environmental data into actionable evidence for policy, planning, resilience, and climate-resilient rural development.

PROFESSIONAL EXPERIENCES

NASA- Lifeline Earth Science Review

Earth Science Review Board Specialist

Dec 2025- Present

- Assisting to integrate Earth observation (satellite) data into humanitarian decision-making.
- Providing guidance on project design where satellite & geospatial data can improve humanitarian initiatives.
- Offering unbiased, high-quality scientific input to strengthen use of Earth science in real-world humanitarian contexts.

DPU-City of Orangeburg, Orangeburg, SC

GIS Administrator

May 2025- Present

- Conducted technical scoping, designed GIS-based solutions, and prepared proposals for enterprise needs using ArcGIS tools.
- Led training sessions and provided implementation support for geospatial applications, enhancing clients' operational efficiency.
- Collaborated cross-functionally with business development and technical teams to deliver customized GIS solutions to clients.

AECOM, Charleston, SC

GIS Specialist II

Sep 2023- Sep 2024

- Managing GIS data, doing geospatial analysis, and mapping and simulating
- Mapping solutions for FEMA coastal flood assessments, living shoreline restoration, and sea level rise modeling; Charting maps, developing ESRI StoryMaps, and producing seamless topographic elevation datasets.

Texas Tech University, Lubbock, Texas

Teaching Assistant (Geographic Information System & Global Environmental Science)

Aug 2021 –Aug 2023

- Utilizing ArcGIS Pro, ArcGIS Online, and ArcMap for spatial data analysis and map creation.
- Performing in-depth analysis and presentation of data by spatial statistics
- Designing and delivering undergraduate lab lectures effectively.

Network for Information, Response, and Preparedness in Disaster, Dhaka, Bangladesh

Program Officer

Jan 2021-Jul 2021

- Led geospatial research initiatives involving both qualitative and quantitative approaches, including full-cycle project management—conceptual planning, methodological design, and oversight of implementation and reporting phases.
- Conducted spatial data analysis using R and Python, developed analytical workflows, and produced publication-ready maps and visualizations to support evidence-based research.
- Supervised interdisciplinary teams and managed fieldwork activities, integrating survey data with spatial datasets to produce comprehensive research outputs.

HandiTech Bangladesh, Dhaka, Bangladesh

Research and GIS Analyst

Jan 2019 – Dec 2020

- Predicting geographic changes in land use and land cover, by loading GIS data, GIS data management, and site plans.
- Designing and prototyping GIS data layers, web map service, map making, GIS calculations, and analysis.

EDUCATION

Texas Tech University, Lubbock, Texas

Master of Science in Geography (Concentration in Geography and GIScience)

CGPA: 4.00

University of Dhaka, Dhaka, Bangladesh

Master in Disaster Management (Concentration in GIS and Natural Hazards)

CGPA: 3.82

Bachelor of Disaster Management

CGPA: 3.69

RELEVANT ACADEMIC RESEARCH

Spatial analysis of flood risk and exploring the feasibility of flood-microinsurance in the Northwestern flood basin of Bangladesh: *ArcGIS Pro, Google Earth Engine, SQL, Flood Risk Map, Floodplain management*

RELEVANT ACADEMIC COURSES

Geographic Information Systems, GIS, and Remote Sensing Applications, Quantitative Method in Geography (R statistical software), Disaster Informatics, Urban flood risk reduction, GIS and spatial Analysis

SKILLS

Spatial Analysis

ArcGIS Pro/enterprise, ArcMap, Survey123, ArcGIS field Maps, Web mapping, ArcGIS Server

Statistical

R, STATA, Python, and SQL

Organizational

Written and oral communication, Efficiency, Attention to detail, Team player, and Self-motivated.

AWARDS

ESRI Special Service in GIS (SAG) 2026 Award	July 2026
Helen DeVitt Jones Fellowship, Texas Tech University	Mar 2022
National Science and Technology (NST) Fellowship	Aug 2022
Bangladesh Sweden Trust Fund	Mar 2023

PROFESSIONAL CERTIFICATION

ArcGIS and ArcGIS pro application	Nov 2019- Dec 2019
Spatial Flood Risk Modelling	May 2018- Jun 2018

Notable Membership

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| <ul style="list-style-type: none">Elected Honorary Member, Research Fellow Bangladesh Research Society (BDRS), Dhaka, Bangladesh | Sep 2024- Present |
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RESEARCH PUBLICATIONS

Scholarly articles-

- Ardon-Dryer, K., & Aziz, T. (2025). Times matter, the impact of convective dust events on air quality in the greater Phoenix area, Arizona. *GeoHealth*, 9 (3), e2024GH001209.
- Dia, R. B., Mallick, J., Aziz, T., Fattah, M. A., Ullah, S., Salam, M. A., ... & Islam, A. R. M. T. (2024). Comparative trend variability analysis of reference evapotranspiration in Bangladesh using multiple trend detection approaches. *Theoretical and Applied Climatology*, 155(7), 6965-6982.
- Saddam, M. M. H., Hossain, K. T., Bhowmick, R. C., Salauddin, M., & Aziz, T. (2023). Assessing the shoreline dynamics of Moheshkhali Island in Bangladesh by integrating GIS techniques and sea-level data. *Regional Studies in Marine Science*, 62, 102941.
- Rahat, S., Jabin, N., Sarwar, S., & Aziz, T. (2021). A Study on Anxiety, Facility, and Protective Measures of Health Professionals of Bangladesh. *Khazanah Sosial*, 3(3), 186-197.
- Aziz, T. (2020). The exodus of Rohingya community: From the past to present. *Re: Locations-Journal of the Asia-Pacific World*, 3(1).
- Aziz, T. (2018). Myth and reality of vulnerability to disaster: Pressure and release model for hazards in Bangladesh. *Journal of South Asian Studies*, 6(1), 23-31.

Scholarly National Level Report for policy recommendations-

- Asikunnaby, M., Mita, H. A., Iqbal, J., Rahman, K. S., Rahman, S., & Aziz, T. (2021). Multi-hazard risk analysis of climate-related disasters in Bangladesh.
- Asikunnaby, M., Mita, H. A., Iqbal, J., Rahman, K. S., Rahman, S., & Aziz, T. (2021). Financial Flow Analysis for Climate Related Disasters in Bangladesh.

INVITED TALK AND CONFERENCE

- Aziz, T., Dryer, KA (2023, July). Impact of dust events on air quality in the great Phoenix, Arizona area, an observation on Particulate Matter (PM10 & PM2.5) at different time intervals [Paper presentation]. International Conference of Aeolian Research 2023, New Mexico State University, Las Cruces. <https://www.icarxi.com/schedule-events/poster-session-b/>
- Lee, J., Aziz, T., Li, H., Wang, X. (2023, July). Decadal Changes in Relative Aeolian Transport Potential in Major Global Dust Source Regions [Paper presentation]. International Conference of Aeolian Research 2023, New Mexico State University, Las Cruces. <https://www.icarxi.com/schedule-events/poster-session-b/>
- Aziz, T. (2022, May). Spatial Analysis of Flood Risk and Exploring the Feasibility of Flood Microinsurance [Paper presentation]. Economics and the Economic System: The Ecological Transition, Università della Tuscia, Italy. <http://www.storep.org/wp/en/19th-annual-storep-conference-26-28-may-2022/>
- Aziz, T. (2022, May). An Empirical Study on Monetary Policy and its Impact on the Economic Growth of a Developing Country, Bangladesh [Paper presentation]. YSI @ Economic and Business History Society Workshop, University of Utah, Salt Lake City. <https://ebhsoc.org/>
- Rahman, M. M., Aziz, T. M., Nasmi, S. U., Himu, M. U., & Islam, S. U. (2020, June 27). Impact of COVID-19 Pandemic on Livelihoods and Food Security in Bangladesh. In 45th Natural Hazard Workshop. Retrieved from <https://hazards.colorado.edu/workshop/2020/abstract/impact-of-covid-19-pandemic-on-livelihoods-and-food-security-in-bangladesh>
- Aziz, T. (2019) 'Gender-Based Situational Analysis of Rohingyas in Bangladesh: An Exploratory Study in Kutupalong Camp and New Arrivals', in Bayes Ahmed (ed.) International Conference on the Rohingya Crisis in Comparative Perspective. 1st edn. London: UCL Institute for Risk and Disaster Reduction (IRDR), University College London (UCL), UK, pp. 169–171. Available at: <https://www.researchgate.net/publication/334000431>

7. Aziz, T. (2019). Exploring the feasibility of private micro flood insurance provision in Bangladesh. In 19th Global Development Conference entitled Knowledge for Sustainable Development: The Research Policy Nexus. Bonn, Germany: GDN. Retrieved from <http://www.gdn.int/conference2019>
8. Aziz, T. (2019). Food Security and Livelihood after Post cyclone: An exploratory study in a selected area of Northern Bangladesh. In 5th Gobeshona International Conference on Climate Knowledge (ICCK) 2019. Dhaka, Bangladesh: Gobeshona5. Retrieved from <http://gobeshona.net/gobeshona5>
9. Aziz, T., & Imran, R. (2018). Disaster, Disability, and Difference: A study on disabled people facing challenges during a disaster in Bangladesh. In 2nd international conference on Disability and Disaster Risk Reduction in Bangladesh. Dhaka, Bangladesh: Ministry of Disaster Management and Relief. Retrieved from https://disastercell.blogspot.com/2019/11/research-and-publications_9.html
10. Sarkar, M. and Aziz, T. (2018) 'Water Security and Justice: Toward a sustainable water solution Water Security and Justice: Toward a sustainable water solution', in Bangladesh, A. A. (ed.) International Conference on Water Root Innovation 2018. Kuakata, Bangladesh: Action Aid, pp. 23–33. doi: 10.13140/RG.2.2.20169.08802.
11. Aziz, T., Farid, Z. I. and Rahman, S. S. (2018) 'Disaster Insurance: A New Horizon of Climate Change Adaptation in Bangladesh', in ICCF 2018. Dhaka: ICCF and CCF, pp. 32–38. doi: 10.13140/RG.2.2.17495.21926.

BOOK CHAPTERS

12. “গবেষণা প্রারম্ভিকা (Gobeshona Praromvika),” তথ্যসূত্র কী এবং কীভাবে (1st ed., Vol. 1, Ser. 1), 2023, Aziz, T.

BOOK REVIEW

13. “গবেষণা প্রারম্ভিকা (Gobeshona Praromvika),” নবান্ন প্রকাশনী (2nd ed., Vol. 1, Ser. 2), accepted, Aziz, T., & Jebin, N. (Eds.).

*The book for their 2nd edition which will be published soon at Bangladesh National book Fair 2026.

RELEVANT PROJECTS

1. Hurriscope GRM: Hurricane Spatial Corridor and Pole Reliability Geo Risk Model 2026
2. GeoSync: Project Intelligence and Coordination Network 2026
3. Natural Damage Assessment Center, Orangeburg, Loss and Damage 2026
4. Automated GIS Model for Database Server Discrepancy Detection 2025
5. Real Time Meteorological Risk Monitoring Network for Electric Substations 2025
6. US Federal Emergency Management Agency, Region 1, Sea Level Rise 2024
7. US Federal Emergency Management Agency, Federal Flood Risk Management Standard (FFRMS) 2024
8. US Federal Emergency Management Agency, Future of Flood Risk Data, Louisiana and Texas 2024
9. US Federal Emergency Management Agency, Zone 2, Coastal Loss and Development 2023
10. US Federal Emergency Management Agency, Zone-2, Coastal Erosion and Development 2023
11. Impact of dust events on air quality in the Great Phoenix, Arizona area, an observation on Particulate Matter (PM10 & PM2.5) at different time 2023
12. Decadal Changes in Relative Aeolian Transport Potential in Major Global Dust Source Regions 2023
13. Assessing the shoreline dynamics of Moheshkhali Island in Bangladesh by integrating GIS techniques and sea level data 2023
14. Comparative Trend Variability Analysis of Reference Evapotranspiration in Bangladesh Using Multiple Trend Detection Approaches 2022
15. Multi hazard risk analysis of climate related disasters in Bangladesh 2021
16. Testing Global Stilling with ERA5 Reanalysis Data 2021
17. Spatial Analysis of Flood Risk and Exploring the Feasibility of Flood Microinsurance 2018

FEATURED IN NATIONAL AND INTERNATIONAL MEDIA

14. [From a small village to global recognition—Tarek Aziz's dream journey](#)
15. [New Study Unveils Hidden Air Quality Risks in Phoenix Dust Storms](#)