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| PRINCIPAL INTERESTS |  |
| Remote Sensing for Artificial Intelligence, Urban Geo Analytics, Geospatial Artificial Intelligence (GeoAI), Environmental Generative AI, Foundation Models, Self-Supervised Learning for Earth Observation, Machine Learning/Deep Learning, GIScience | |
| ACADEMIC BACKGROUND |  |
| **The University of Texas at Austin**  PhD in Geography and the Environment  CGPA: 4 out of 4 | Austin, Texas  Fall 2024 – Spring 2028 |
| **The University of Texas at Austin**  MSc in Geography and the Environment  CGPA: 4 out of 4 | Austin, Texas  Fall 2022 – Spring 2024 |
| **Rajshahi University of Engineering & Technology**  Bachelor of Urban & Regional Planning.  CGPA: 3.42 out of 4 | Rajshahi, Bangladesh  Spring 2013 – Fall 2017 |
| **RELEVANT COURSEWORKS** |  |
| Advanced Geographic Information System, Introduction to GeoAI, Seminar in GeoAI, LiDAR Analysis, Geospatial Application in Environmental Science, Regression Analysis, Longitudinal Analysis, Discrete Multivariate Models | |
| **FELLOWSHIPS, AWARDS & RESEARCH GRANTS** |  |
| **Harry E. and Bernice M. Moore Fellowship** (2*0,000$*)  Funding support for completing PhD dissertation  Hogg Foundation for Mental Health, The University of Texas at Austin | Austin, TX  Fall 2025 – Spring 2026 |
| **Scholars Lab Fellowship** *(3000$)*  Funding for completing a project that involves data, digital collections, digital methods/platforms.  The University of Texas at Austin Libraries | Austin, TX  Fall 2025 – Spring 2026 |
| **Provost's Graduate Excellence Fellowship** (*50,000$*)  Funding support for completing MA and PhD  Department of Geography and the Environment, The University of Texas at Austin | Austin, TX  Fall 2022 – Spring 2023 and  Fall 2025 – Spring 2026 |
| **Robert E. Veselka Memorial Fellowship - 2025** (*1500$*)  Funding support for completing dissertation fieldwork.  Department of Geography and the Environment, The University of Texas at Austin | Austin, TX  Summer 2025 |
| **COLA Dissertation Research Award - 2024** (*500$*)  Funding support for completing dissertation fieldwork.  Department of Geography and the Environment, The University of Texas at Austin | Austin, TX  Summer 2024 |
| **First Position in Research Poster at UT GIS Day 2024 (***250$***)**  The University of Texas Libraries | Austin, TX  November 2024 |
| **AGS Council Fellowship - 2024** (*2000$*)  Graduate student scholarship in pursuit of geographical knowledge and fieldwork  American Geographical Society | New York, NY  March 2024 - March 2025 |
| **Professional Development Award - 2024** (*250$*)  Funding support to attend professional meetings & conferences to disseminate research findings.  Department of Geography and the Environment, The University of Texas at Austin | Austin, TX  January 2023 - April 2023 |
| **Graduate Student Paper Competition Third Position– 2024 (***100$***)**  SWAAG Annual Meeting | San Marcos, TX  October, 2024 |
| **Robert E. Veselka Memorial Fellowship - 2023** (*2000$*)  Funding support for completing dissertation fieldwork.  Department of Geography and the Environment, The University of Texas at Austin | Austin, TX  Summer 2023 |
| **Professional Development Award - 2023** (*1200$*)  Funding support to attend professional meetings & conferences to disseminate research findings.  Department of Geography and the Environment, The University of Texas at Austin | Austin, TX  January 2023 - April 2023 |
| **Travel Grant for Urban Climate Solutions Workshop – 2023** (*500$*)  Funding support to present research paper on Exploring the role of vegetation dynamics in modulating summer diurnal surface temperature  School of Architecture, Texas A&M University | College Station, TX  October 9-10, 2023 |
| **Fundamental Research Grants Scheme** (*8000$*)  Project Title: Developing a framework for environmental sustainability by mitigating ecological risk in the fastest-growing urban fabric.  Ministry of Education of Malaysia. | Malaysia  August 2022 - July 2024 |
| **Local Pathways Fellowship**  Project: Effective Land Use Management for Ensuring Inclusive and Sustainable Urbanization in Rajshahi City, Bangladesh (SDG Goal 11)  UN Sustainable Development Solutions Network (SDSN). | New York (Remote)  Sept 2018-Dec 2019 |
| **TECHNICAL SKILLS** |  |
| * **Deep Learning Framework:** PyTorch, TensorFlow 2.0, * **Programming Languages:** Python, JavaScript, R, MATLAB * **Geospatial & Remote Sensing:** ArcGIS Pro, Google Earth Engine, QGIS, Erdas Imagine, ENVI * **Statistical Software:** STATA, SPSS * **Others:** HTML, Git * **Languages:** English (Full professional proficiency), Bangla (Native), Urdu and Hindi (Speaking) | |
| **PROFESSIONAL EXPERIENCE** |  |
| **The University of Texas at Austin**  **Graduate Teaching Assistant**   * Leading discussion sessions and labs, offering clear explanations and guidance on course material. * Evaluated and graded a variety of exercises, both in discussion sections and for homework assignments. * Readily available to assist students with their coursework during class and office hours. * Tracking student's participation and attendance, ensuring a conducive learning environment. | Austin, TX  August 2023 – Present |
| **The University of Texas at Austin**  **Provost's Graduate Excellence Fellow**   * Engage in research, teaching, and academic activities related to Environmental Sustainability. * Participate in conferences, workshops, and other professional development opportunities. | Austin, TX  August 2022 – August 2023 |
| **ICLEI – Local Government for Sustainability (International NGO)**  **Urban Planner and Project Officer**   * Remote sensing database creation, monitoring, and ensuring the quality of datasets. * Mapping land cover, natural assets, fragile urban system, climate risk, and vulnerable hotspots. * City profile, vulnerability assessment, and Greenhouse Gas emission report preparation. * Developed project reports and Terms of Reference (ToR). * Identify potential climate change and environmental protection-related projects. | Rajshahi, Bangladesh  November 2019 - July 2022 |
| **University of Liberal Arts Bangladesh (ULAB)**  **Publication Associate (Consultant)**  Project: Building Resilient Universities: Promotion of Democratic Citizenship And Media Literacy.   * Refining and Publishing environmental sustainability, resilience management, COVID-19, social science, and business management-related reports/white papers in peer-reviewed journals by strengthening methodology, result, discussion, and language structure corrections. | Dhaka, Bangladesh  October 2020- August 2022 |
| **Rajshahi Development Authority (Government Organization)**  **GIS Specialist**   * Remote sensing database preparation, error checking, and digitization. * Land use map preparation using commercial and freely available satellite images. * Suitability analysis and risk assessment. * Provide methodological and technical support in data acquisition. * Monitor and ensure the quality of the fieldwork and data management. | Rajshahi, Bangladesh  Oct 2018 – Oct 2019 |
| **B & F Company Ltd.**  **GIS Specialist**   * Land use map preparation using RapidEye and Landsat images. * Data acquisition from satellite and ground-based platforms. * Preparation of layout plan and 3D visualization. * Land suitability analysis. * Project completion report preparation. | Dhaka, Bangladesh  May 2018 - September 2018 |
| **Center for Environmental and Geographic Information Services (Non-Profit org.)**  **Research Consultant**   * Land use map preparation using Rapid Eye, Sentinel, and Landsat images. * Remote sensing database creation and error checking * DEM creation, Digitizing, topology, and error correction | Dhaka, Bangladesh  November 2017 - April 2018 |
| **Eusuf and Associates**  **GIS Consultant**  Project: Urban Primary Health Care Services Delivery Project (UPHCSDP)   * Mapping the Slum catchment area using GPS, GIS, and Remote sensing data. * Ground Truthing using GIS & GPS * Topographical survey * Project report preparation | Dhaka, Bangladesh  April 2017- Oct 2017 |
| **Bangladesh Institute of Planners (BIP)**  **Research Assistant**  Project: Developing Active Transportation Indicators for Rajshahi, Bangladesh.   * Travel behavior questionnaire survey * Data entry and analysis * Travel behavior variables mapping * Documentation of survey outputs as a report. | Dhaka, Bangladesh  March 2017- Sept 2017 |
| **Caritas Bangladesh**  Research Consultant,  Project: Integrated Community Development Project (ICDP)   * Mapping the Slum catchment area using GPS, GIS, and Remote sensing data. * Ground Truthing using GIS & GPS * Topographical survey | Rajshahi, Bangladesh  April 2016- October 2016 |

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| **RESEARCH** | | |
| ***Peer-Reviewed Journal Publications***   1. **Kafy, AA.**, Crews, KA., Thompson, AA.. (***2025***). Exploring the cooling potential of green roofs for mitigating diurnal heat island intensity by utilizing Lidar and Artificial Neural Network. Sustainable Cities and Society, 116, 105893. https://doi.org/10.1016/j.scs.2024.105893. 2. **Kafy, AA.**, Dey, NN., Saha, M., *et al*. (***2024***). Leveraging machine learning algorithms in dynamic modeling of urban expansion, surface heat islands, and carbon storage for sustainable environmental management in coastal ecosystems. Journal of Environmental Management, 370, 122427. <https://doi.org/10.1016/j.jenvman.2024.122427>. 3. AlRifai, MH., **Kafy, AA.**, & Altuwaijri, HA. (***2025***). Quantitative Assessment of Flood Risk Through Multi Parameter Morphometric Analysis and GeoAI: A GIS-Based Study of Wadi Ranuna Basin in Saudi Arabia. *Water*, *17*(14), 2108. <https://doi.org/10.3390/w17142108> 4. Altuwaijri, HA., **Kafy, AA**., (***2025***). Decoding atmospheric thermal exposure patterns with implications for environmental health and urban air quality over forty years in arid regions. *Air Quality, Atmosphere & Health* **18**, 2405–2430. <https://doi.org/10.1007/s11869-025-01780-x> 5. Altuwaijri, HA., **Kafy, AA**., Rahaman, ZA., *et al.* (***2025***). Predicting Spatiotemporal Dynamics of Land Use Influenced Thermal Patterns Using Remote Sensing-based Machine Learning Algorithms. *Rangeland Ecology & Management*, *103*, 8-27.<https://doi.org/10.1016/j.rama.2025.06.017> 6. Altuwaijri, HA., **Kafy, AA**., Rahaman, ZA., (***2025***). Multi-temporal remote sensing and geospatial analysis for urban ecosystem service dynamics: A three-decade assessment of land surface transformation in Jeddah, Saudi Arabia. *Physics and Chemistry of the Earth, Parts A/B/C*, *139*, 103892.<https://doi.org/10.1016/j.pce.2025.103892> 7. Altuwaijri, HA., **Kafy, AA**., Rahaman, ZA., *et al.* (***2025***). Biophysical parameters and land surface temperature dynamics in arid urban environments: A comprehensive machine learning approach. *Environmental Earth Sciences*, *84*(15), 434. <https://doi.org/10.1007/s12665-025-12427-6> 8. Miah, M.T., Fariha, J.N., **Kafy, A.A** *et al.* (***2025***). Geostatistical assessment of Spatial climate dynamics using mono window machine learning algorithm for decoding land cover and demographic shifts influence on thermal environment. *Theor Appl Climatol* **156**, 544 (2025). <https://doi.org/10.1007/s00704-025-05750-2> 9. Salim, M. Z., Rahman, M. H., **Kafy, AA**, *et al.* (***2025***). Automated geospatial workflow for spatiotemporal assessment of urban expansion influence on deforestation in Northeast Florida. Kuwait Journal of Science, 100453.<https://doi.org/10.1016/j.kjs.2025.100453> 10. AlDousari, A.E., **Kafy, AA** & Rahaman, Z.A. (***2025***) Unveiling the dynamic interplay of biophysical, morphological, and temperature extremes in arid regions of Kuwait: Decoding sustainable urban resilience by utilizing remote sensing techniques. *Arab J Geosci* 18, 131. <https://doi.org/10.1007/s12517-025-12266-6> 11. Aldosary, A.S., Al-Ramadan, B., Kafy, AA *et al.* (***2025***). Illuminating the invisible: unveiling multiscale environmental impacts of ultraviolet irradiance utilizing advanced statistical analysis in arid climate. *Theor Appl Climatol* 156, 76. <https://doi.org/10.1007/s00704-024-05314-w> 12. Sonet, M.S., Hasan, M.Y., **Kafy, AA** *et al.* (***2025***) Spatiotemporal analysis of urban expansion, land use dynamics, and thermal characteristics in a rapidly growing megacity using remote sensing and machine learning techniques. *Theor Appl Climatol* 156, 79. <https://doi.org/10.1007/s00704-024-05264-3> 13. Shuvo, R.M., Chowdhury, R.R., Chakroborty, S. **Kafy, AA** *et al.* (***2025***)  Groundwater sustainability assessment and desertification susceptibility mapping in semi-arid Bangladesh using integrated remote sensing and logistic regression modeling. *Appl Water Sci* **15**, 224. <https://doi.org/10.1007/s13201-025-02584-1> 14. Al-Ramadan, B., Aldosary, A.S., Kafy, A. *et al.* (***2025***)  . Unraveling solar irradiance dynamics in arid atmospheres: A multi-decadal wavelet coherence and probability density functions analysis with implications for air quality, climate, and renewable energy. *Air Qual Atmos Health* **18**, 1463–1487. <https://doi.org/10.1007/s11869-025-01718-3> 15. **Kafy, AA**., Altuwaijri, HA. (***2024***). Eco-climatological modeling approach for exploring spatiotemporal dynamics of ecosystem service values in response to land use and land cover changes in Riyadh, Saudi Arabia. Theoretical and Applied Climatology. <https://doi.org/10.1007/s00704-024-05199-9>. 16. Saha, M., **Kafy, AA**., Bakshi, A., *et al.* (***2024***). The urban air quality nexus: Assessing the interplay of land cover change and air pollution in emerging South Asian cities. Environmental Pollution, 361, 124877. <https://doi.org/10.1016/j.envpol.2024.124877>. 17. Salim, MZ., **Kafy, AA**., Altuwaijri, HA., *et al.* (***2024***). Quantitative assessment of Hurricane Ian’s damage on urban vegetation dynamics utilizing Landsat 9 in Fort Myers, Florida. Physics and Chemistry of the Earth, Parts A/B/C, 136, 103750. <https://doi.org/10.1016/j.pce.2024.103750>. 18. Almulhim, AI., **Kafy, AA**., Ferdous, MN., *et al.* (***2024***). Harnessing urban analytics and machine learning for sustainable urban development: A multidimensional framework for modeling environmental impacts of urbanization in Saudi Arabia. Journal of Environmental Management, 357, 120705. <https://doi.org/10.1016/j.jenvman.2024.120705>. 19. AlDousari, AE., Fattah, M., **Kafy, AA**. (***2024***). Assessing Solar Irradiance Trends and Temperature Extremes by Applying Machine Learning Based Statistical Modelling for Renewable Energy Optimization. Earth Syst Environ. <https://doi.org/10.1007/s41748-024-00412-1>. 20. Rahaman, ZA., **Kafy, AA**., Fattah, MA. et al. (***2024***). Enhancing Urban Ecological Risk Assessment by Integrating Spatial Modeling and Machine Learning for Resilient Environmental Management in UNESCO World Heritage Cities. Earth Syst Environ. <https://doi.org/10.1007/s41748-024-00468-z>. 21. **Kafy, AA**., Saha, M., Fattah, MA., *et al.* (***2023***). Integrating forest cover change and carbon storage dynamics: Leveraging Google Earth Engine and InVEST model to inform conservation in hilly regions. Ecological Indicators, 152, 110374. <https://doi.org/10.1016/j.ecolind.2023.110374>. 22. **Kafy, AA**., Bakshi, A., Saha, M., *et al.* (***2023***). Assessment and prediction of index based agricultural drought vulnerability using machine learning algorithms. The Science of the Total Environment, 867, 161394–161394. <https://doi.org/10.1016/j.scitotenv.2023.161394> 23. Mukarram. MMT., **Kafy, AA**., Mukarram. MMT., *et al.* (***2023***). Perception of coastal citizens on the prospect of community-based rainwater harvesting system for sustainable water resource management. Resources, Conservation & Recycling, 198, 107196. <https://doi.org/10.1016/j.resconrec.2023.107196> 24. Morshed, S.R., Fattah, M.A., **Kafy, AA**., *et al.* (***2024***). Decoding seasonal variability of air pollutants with climate factors: A Geostatistical approach using multimodal regression models for informed climate change mitigation. Environmental Pollution, p.123463. <https://doi.org/10.1016/j.envpol.2024.123463> 25. Fattah, M. A., Morshed, S. R., **Kafy, AA**., *et al.* (***2023***). Wavelet coherence analysis of PM2. 5 variability in response to meteorological changes in South Asian cities. Atmospheric Pollution Research, 14(5), 101737. <https://doi.org/10.1016/j.apr.2023.101737> 26. Miah, M. T., Fariha, J. N., **Kafy, AA**., *et al.* (**2023**). Exploring the nexus between land cover change dynamics and spatial heterogeneity of demographic trajectories in rapidly growing ecosystems of South Asian cities. Ecological Indicators, 158, 111299. https://doi.org/10.1016/j.ecolind.2023.111299 27. **Kafy, AA**.**.**, Saha, M., Faisal, A.A., *et al.*  (***2022***). Predicting the impacts of land use/land cover changes on seasonal urban thermal characteristics using machine learning algorithms. Building and Environment, 217, 109066–. <https://doi.org/10.1016/j.buildenv.2022.109066> 28. AlDousari,A., **Kafy, AA**., Saha, M., *et al.* (***2022***). Modelling the impacts of land use/land cover changing pattern on urban thermal characteristics in Kuwait. Sustainable Cities and Society, 86, 104107–. <https://doi.org/10.1016/j.scs.2022.104107> 29. Saha,M., **Kafy, AA.,** Bakshi, A., *et al.*  (***2022***). Modelling microscale impacts assessment of urban expansion on seasonal surface urban heat island intensity using neural network algorithms. Energy and Buildings, 275, 112452–. <https://doi.org/10.1016/j.enbuild.2022.112452> 30. Zhang, M., **Kafy, AA**., Xiao, P., *et al.* (***2022***). Impact of urban expansion on land surface temperature and carbon emissions using machine learning algorithms in Wuhan, China. Urban Climate, 47, 101347–. <https://doi.org/10.1016/j.uclim.2022.101347> 31. Rahaman,ZA., **Kafy, AA**., Saha, M., *et al.*  (***2022***). Assessing the impacts of vegetation cover loss on surface temperature, urban heat island and carbon emission in Penang city, Malaysia. Building and Environment, 222, 109335–. <https://doi.org/10.1016/j.buildenv.2022.109335> 32. Zhang,M., **Kafy, AA.,** Ren, B., *et al.* (***2022***). Application of the Optimal Parameter Geographic Detector Model in the Identification of Influencing Factors of Ecological Quality in Guangzhou, China. Land (Basel), 11(8), 1303–. <https://doi.org/10.3390/land11081303> 33. Wang, Zhang, M., **Kafy, AA**., *et al.* (***2022***). Predicting the impacts of urban land change on LST and carbon storage using InVEST, CA-ANN and WOA-LSTM models in Guangzhou, China. Earth Science Informatics, 16(1), 437–454. <https://doi.org/10.1007/s12145-022-00875-8> 34. Rahaman,ZA., **Kafy, AA**., Faisal, AA., *et al.* (***2022***). Predicting Microscale Land Use/Land Cover Changes Using Cellular Automata Algorithm on the Northwest Coast of Peninsular Malaysia. Earth Systems and Environment, 6(4), 817–835. <https://doi.org/10.1007/s41748-022-00318-w> 35. Zhang,M., Zhang, C., **Kafy, AA**., & Tan, S. (***2022***). Simulating the Relationship between Land Use/Cover Change and Urban Thermal Environment Using Machine Learning Algorithms in Wuhan City, China. Land (Basel), 11(1), 14–. <https://doi.org/10.3390/land11010014> 36. Faisal,AA., **Kafy, AA**.,Abdul Fattah, *et al.* (***2022***). Assessment of temporal shifting of PM2.5, lockdown effect, and influences of seasonal meteorological factors over the fastest-growing megacity, Dhaka. Spatial Information Research, 30(3), 30(3), 441–453. <https://doi.org/10.1007/s41324-022-00441-w> 37. Wang, A., **Kafy, AA**., Rahaman, Z. A., *et al.* (***2022***). Investigating drivers impacting vegetation carbon sequestration capacity on the terrestrial environment in 127 Chinese cities. Environmental and Sustainability Indicators, 16, 100213–. <https://doi.org/10.1016/j.indic.2022.100213> 38. Guha,B., Momtaz, Z., **Kafy, AA.**, & Rahaman, Z. A. (***2022***). Estimating solid waste generation and suitability analysis of landfill sites using regression, geospatial, and remote sensing techniques in Rangpur, Bangladesh. Environmental Monitoring and Assessment, 195(1), 54–54. <https://doi.org/10.1007/s10661-022-10695-4> 39. Jodder,PK., Leya, R. S., Rahaman, K. R., **Kafy, AA**., *et al.* (***2022***). Modeling the Impacts of Residential, Commercial, and Industrial Land use on Carbon Footprints Using Kernel Density Function in an Urban Setting. Earth Systems and Environment, 7(1), 237–254. <https://doi.org/10.1007/s41748-022-00332-y> 40. **Kafy, AA.,** Faisal, A,A., Rahman, M. S., *et al.*  (***2021***). Prediction of seasonal urban thermal field variance index using machine learning algorithms in Cumilla, Bangladesh. Sustainable Cities and Society, 64, 102542–. <https://doi.org/10.1016/j.scs.2020.102542> 41. **Kafy, AA.**, Faisal, AA., Al Rakib, A., *et al.* (***2021***). Predicting changes in land use/land cover and seasonal land surface temperature using multi-temporal Landsat images in the northwest region of Bangladesh. Heliyon, 7(7), e07623–e07623. <https://doi.org/10.1016/j.heliyon.2021.e07623> 42. **Kafy, AA.**, Al Rakib, A., Akter, K. S., *et al.* (***2021***). Monitoring the effects of vegetation cover losses on land surface temperature dynamics using geospatial approach in Rajshahi City, Bangladesh. Environmental Challenges, 4, 100187–. <https://doi.org/10.1016/j.envc.2021.100187> 43. **Kafy, AA.**, Dey, N. N., Al Rakib, A., *et al.* (***2021***). Modeling the relationship between land use/land cover and land surface temperature in Dhaka, Bangladesh using CA-ANN algorithm. Environmental Challenges, 4, 100190–. <https://doi.org/10.1016/j.envc.2021.100190> 44. **Kafy, A.A.**, Faisal, A.A., Al Rakib, *et al.* (***2021***). The operational role of remote sensing in assessing and predicting land use/land cover and seasonal land surface temperature using machine learning algorithms in Rajshahi, Bangladesh. Applied Geomatics, 13(4), 793–816. <https://doi.org/10.1007/s12518-021-00390-3> 45. Faisal, AA., **Kafy, AA**., Al Rakib, A., *et al.* (***2021***). Assessing and predicting land use/land cover, land surface temperature and urban thermal field variance index using Landsat imagery for Dhaka Metropolitan area. Environmental Challenges, 4, 100192–. <https://doi.org/10.1016/j.envc.2021.100192> 46. Faisal, AA., **Kafy, AA**., Foyezur Rahman, A. N. M., *et al.*  (***2021***). Assessment and prediction of seasonal land surface temperature change using multi-temporal Landsat images and their impacts on agricultural yields in Rajshahi, Bangladesh. Environmental Challenges, 4, 100147–. <https://doi.org/10.1016/j.envc.2021.100147> 47. Naim,MN & **Kafy, AA.** (***2021***). Assessment of urban thermal field variance index and defining the relationship between land cover and surface temperature in Chattogram city: A remote sensing and statistical approach. Environmental Challenges, 4, 100107–. <https://doi.org/10.1016/j.envc.2021.100107> 48. **Kafy, AA.**, Faisal, A.-A., Raikwar, V., *et al.* (***2021***). Geospatial approach for developing an integrated water resource management plan in Rajshahi, Bangladesh. Environmental Challenges, 4, 100139–. <https://doi.org/10.1016/j.envc.2021.100139> 49. Dey, N., Al Rakib, A., **Kafy, AA.**, & Raikwar, V. (***2021***). Geospatial modelling of changes in land use/land cover dynamics using Multi-layer Perceptron Markov chain model in Rajshahi City, Bangladesh. Environmental Challenges, 4, 100148–. <https://doi.org/10.1016/j.envc.2021.100148> 50. **Kafy, AA.**, Rahman, M. S., Faisal, A.A., *et al.* (***2020***). Modelling future land use land cover changes and their impacts on land surface temperatures in Rajshahi, Bangladesh. Remote Sensing Applications, 18, 100314–. <https://doi.org/10.1016/j.rsase.2020.100314> 51. **Kafy, AA.**, Faisal, A.A., Shuvo, R. M., *et al.* (***2020***). Remote sensing approach to simulate the land use/land cover and seasonal land surface temperature change using machine learning algorithms in a fastest-growing megacity of Bangladesh. Remote Sensing Applications, 21, 100463–. <https://doi.org/10.1016/j.rsase.2020.100463> 52. Rahman, Mohiuddin, H., **Kafy, AA.,** Sheel, P. K., & Di, L. (***2018***). Classification of cities in Bangladesh based on remote sensing derived spatial characteristics. Journal of Urban Management, 8(2), 206–224. <https://doi.org/10.1016/j.jum.2018.12.001>   ***Peer-Reviewed Book Chapter Publications***   1. **Kafy AA,** Naim NH, Khan MH, Islam MA, Al Rakib A, Faisal AA, Sarker MH (***2021***). Prediction of urban expansion and identifying its impacts on the degradation of agricultural land: a machine learning-based remote-sensing approach in Rajshahi, Bangladesh. Re-envisioning remote sensing applications (Taylor & Francis). [http://dx.doi.org/10.1201/9781003049210-6](http://dx.doi.org/10.1201/9781003049210-6%20%20) 2. **Kafy AA,** Islam M, Sikdar S, Ashrafi TJ, Al-Faisal A, Islam MA, Al Rakib A, Khan MH, Sarker MH, Ali MY. (***2021***). Remote Sensing-Based Approach to Identify the Influence of Land Use/Land Cover Change on the Urban Thermal Environment: A Case Study in Chattogram City, Bangladesh. Re-envisioning remote sensing applications (Taylor & Francis). [http://dx.doi.org/10.1201/9781003049210-16](http://dx.doi.org/10.1201/9781003049210-16%20%20)   ***Reports***   1. Padigala, B., Rashid, Md. J., **Kafy, AA**, Kolsepatil, N., Nagarajan, N., Mishra, P., Sadhukhan, B., & Chaturvedula, S. (2022). Climate Resilient City Action Plan Rajshahi, Bangladesh. <Https://Southasia.Iclei.Org/Publication/Climate-Resilient-City-Action-Plan-Rajshahi-Bangladesh/>. 2. Rashid, M. J., **Kafy, AA**, Mishra, P., Padigala, B., Kolsepatil, N., & Chaturvedula, S. (2022). Greenhouse Gas Emission Inventory Report (2017-18), Rajshahi. <Https://Southasia.Iclei.Org/Publication/Greenhouse-Gas-Emission-Inventory-Report-2017-18-Rajshahi/>. 3. Sen, M., **Kafy, AA**, & Rashid, M. J. (2022). Guidelines for Development of Open Green Spaces in Rajshahi. <Https://Southasia.Iclei.Org/Publication/Guidelines-for-Development-of-Open-Green-Spaces-in-Rajshahi/>. 4. Khan, R., Blackwell, C., **Kafy, AA**, & Sadhukhan, B. (2022). Reducing Heat Impacts in Rajshahi City, Bangladesh. <Https://Southasia.Iclei.Org/Publication/Reducing-Heat-Impacts-in-Rajshahi-City-Bangladesh/>. 5. Rashid, M. J., & **Kafy, AA**. (2021). City Resilience Strategy\_Rajshahi. <Https://Southasia.Iclei.Org/Publication/City-Resilience-Strategy_rajshahi/>.   ***News Articles***   1. **Kafy, AA** (2022). Urban LEDS-II: Rajshahi Approves Climate Action Plan.<https://Southasia.Iclei.Org/News/Urban-Leds-Ii-Rajshahi-Approves-Climate-Action-Plan/>. 2. **Kafy, AA** (2022). Urban development must be planned and climate-resilient: Experience from Rajshahi City, Bangladesh. <https://Cdkn.Org/Story/Feature-Urban-Development-Must-Be-Planned-and-Climate-Resilient-Experience-from-Rajshahi-City-Bangladesh>. 3. **Kafy, AA** (2022). Urban-LEDS II in Rajshahi & Narayanganj: Leading the way for Climate-Resilient Development in Bangladesh. <https://Southasia.Iclei.Org/News/Urban-Leds-Ii-in-Rajshahi-Narayanganj-Leading-the-Way-for-Climate-Resilient-Development-in-Bangladesh/>. 4. **Kafy, AA** (2021). Rajshahi advances its Urban Greening actions and completes plantation for a pilot project on biodiversity. <https://Urban-Leds.Org/Rajshahi-Advances-Its-Urban-Greening-Actions-and-Completes-Plantation-for-a-Pilot-Project-on-Biodiversity-2/>. 5. **Kafy, AA**, & Rashid, M. J. (2020). 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[https://www.bip.org.bd/admin/uploads/bip-publication/publication-20/201912270424103.pdf](https://www.bip.org.bd/admin/uploads/bip-publication/publication-20/201912270424103.pdf%20) 3. **Kafy AA**, Hasan MM, Ali MR, Uddin MS. (***2019***). Application of artificial hierarchy process for landslide susceptibility modelling in Rangamati Municipality Area, Bangladesh. International Conference on Disaster Risk Management, Dhaka, Bangladesh. <https://jidpus.buet.ac.bd/ICDRM2019/proceedings> 4. **Kafy AA**, Faisal AA, Khan HA, Sheel PK. (2018). Exploring The Association of Surface Water Body Change and Rapid Urbanization in Rajshahi City Corporation (RCC) Area Using RS and GIS. National Conference on Water Resources Engineering, Chittagong, Bangladesh. [http://103.99.128.19:8080/jspui/handle/123456789/57](http://103.99.128.19:8080/jspui/handle/123456789/57%20) 5. **Kafy AA**. (2018). Pond Filling Locations Identification Using Landsat-8 Images In Comilla District, Bangladesh. 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| **WORKSHOPS, PRESENTATIONS, AND CERTIFICATIONS** | |  |
|  | |  |
| Poster presentation at Geography 2050: Cooperation & Conflict In A Changing Climate - 2024  The American Geographical Society  Title: Predicting Green Roof Cooling Potential to Mitigate Diurnal Heat Island Intensity Using 2D/3D Urban Characteristics & LiDAR | | New York, NY  November 2024 |
| Poster presentation at UT GIS Day - 2024  The University of Texas at Austin  Title: Neural Network Driven Thermal Cooling Efficiency Modeling of Strategically Placed Green Roofs Using LiDAR Derived 2D/3D Urban Characteristics | | Austin, TX  November 2024 |
| Graduate Student Research Paper Competition at SWAAG - 2024  Texas State University  Title: Enhancing cooling precision: Modeling green roofs potential to mitigate daytime heat intensity using 2D/3D urban indicators, Lidar, and machine learning algorithms | | San Marcos, TX  October 6-8, 2024 |
| Fundamentals for Teaching Assistants  Center for Teaching and Learning, The University of Texas at Austin | | Austin, TX  Fall 2023 (Aug – Dec) |
| Research Paper presentation at Urban Climate Solutions Workshop - 2023  School of Architecture, Texas A&M University  Title: Exploring the role of vegetation dynamics in modulating summer diurnal surface temperature | | College Station, TX  October 9-10, 2023 |
| Poster presentation at AAG - 2023  The American Association of Geographers  Title: Microscale impacts assessment of urban expansion on seasonal urban heat island intensity using neural network algorithms | | Denver, CO  March 23-27, 2023 |
| Poster presentation at UT GIS Day - 2022  The University of Texas at Austin  Title: Modelling microscale impacts assessment of urban expansion on seasonal surface urban heat island intensity using neural network algorithms | | Austin, TX  November 2022 |
| ICLEI World Congress - 2022  Hosted by ICLEI - Local Governments for Sustainability and the City of City of Malmö, Sweden.   * A major international event that brings together local and regional leaders including experts and practitioners from more than 1,750 cities, towns, and regions, to discuss and promote sustainable urban development. | | Malmö, Sweden  May 11-13, 2022 |
| School of Climate Change 2021  Organized by Oxford Climate Society   * Gained comprehensive understanding of climate science. * Learned about climate change mitigation strategies. * Acquired knowledge of international climate policies. | | Oxford, England, UK  September 2021 – December 2021 |
| Geoinformatics Summer School - 2021  Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing (LIESMARS), Wuhan University, China   * The summer school course covered fundamental concepts, methodologies, and technologies in Multi-temporal SAR Interferometry for Disaster Mitigation, Machine Learning & Social Sensing, Geospatial Big Data Computing and Disaster Management. | | Wuhan, China  August 23-31, 2021 |
| 21 Days GIS Training Programme using QGIS - 2020  Department of Geography, School of Earth Sciences, Central University of Karnataka, India, Jointly with State Institute of Urban Development.   * Contents include Data Management, Spatial Analysis, analysis and interpretation of spatial data, and Mapping in QGIS platform. | | Karnataka, India  July13 – August 2, 2020 |
| International Geoinformatics Summer School - 2018  Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing (LIESMARS), Wuhan University, China   * Paper Presentation: Modelling future land use land cover changes and their impacts on land surface temperatures in Rajshahi, Bangladesh. * Lectures by experts and hands-on sessions related to fundamental concepts, methodologies, and advanced technologies in remote sensing, 3d modelling, spatial statistics, and big data analysis. | | Wuhan, China  July 1-8, 2018 |
| Workshop on GIS Programming & Algorithm - 2017  Bangladesh Institute of Planners (BIP)., Dhaka, Bangladesh   * The workshop covered hands on training on Python scripting in GIS, interact with spatial databases and GIS application development. | | Dec 24-25, 2017  Dhaka, Bangladesh |
| **Workshop on Multidisciplinary Application of GIS**  Department of Urban and Regional Planning, Rajshahi University of Engineering & Technology – Rajshahi, Bangladesh   * The workshop covered the use of GIS for planning and development, zoning, transportation planning, demographic analysis, habitat mapping, climate change modeling, tracking biodiversity, and environmental impact assessment. | | Rajshahi, Bangladesh  December 24-25, 2015 |
| **Workshop on Principles of GIS and Remote Sensing**  Department of Urban and Regional Planning, Rajshahi University of Engineering & Technology – Rajshahi, Bangladesh.   * The workshop covered GIS practical exercises, satellite image analysis, GIS and remote sensing integration. | | Rajshahi, Bangladesh  May 2-4, 2015 |
| **SERVICES** | |  |
| ***Professional Affiliations*** | |  |
| * Member, American Geophysical Union * Member, American Geographical Society * Member, American Association of Geographers * Member, Bangladesh Institute of Planners   Membership in such organizations involves a commitment to the profession, access to resources and opportunities for professional development, and the chance to network with other professionals in the field. | |  |
| ***Journal Reviewing*** | |  |
| ***Elsevier***   * Remote Sensing of Environment * Sustainable Cities and Society * Science of Total Environment * Journal of Environmental Management * Building and Environment * Environmental Modelling & Software * Advance in Space Research * Remote Sensing Applications: Society and Environment * Cities * World Development Sustainability | ***Springer***   * Environmental Monitoring and Assessment * Theoretical and Applied Climatology * GeoJournal * Natural Hazard   ***Taylor and Francis***   * Geocarto International * Applied Artificial Intelligence * Geo-Spatial Information Research * International Journal of Digital Earth | |

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