

Abdul Mobin Ibna Hafiz

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RESEARCH INTERESTS

Microplastic transport modeling; Environmental pollutant fate and transport; Statistical, machine learning, and process-based integrated hybrid modeling; Water quality modeling; Urban stormwater management; Climate change impacts on water resources

EDUCATION

- **Florida State University** *August 2023 – Present*
Doctor of Philosophy in Civil and Environmental Engineering Tallahassee, FL
- **Bangladesh University of Engineering and Technology (BUET)** *February 2016 – February 2021*
Bachelor of Science in Civil Engineering Dhaka, Bangladesh

WORK EXPERIENCE

- **Graduate Research Assistant** *August 2023 – Present*
Resilient Infrastructure and Disaster Response (RIDER) Center, FAMU-FSU College of Engineering Tallahassee, FL
- **Research Associate** *November 2021 – June 2023*
UKRI – GCRF Living Deltas Hub, Institute of Water and Flood Management (IWFM), BUET Dhaka, Bangladesh

FUNDED RESEARCH

1. **RAPID: Short- and mid-term dynamics of microplastic transport in urban drainage systems after Hurricane Debby**
Role: Project Scientist (Contributed to sample collection and proposal development)
Funding Agency: National Science Foundation (NSF)
Total Awarded Budget: \$200,000 (1 year)
PI: Dr. Ebrahim Ahmadisharaf; *Co-PI:* Maryam Salehi
2. **Tracking historical changes in vegetation across Seminole Tribe of Florida**
Role: Contributed to Proposal Development
Funding Agency: FSU Provost's Public Research Impact Grant (PPIRG)
Period: February 2026 – July 2026

PUBLICATIONS

Under Review / In Preparation

1. **Ibna Hafiz, A.M., Ahmadisharaf, E., Salehi, M.** "A global-scale deep learning model to predict microplastic concentration in marine environments." (In Preparation).
2. **Ibna Hafiz, A.M., Ahmadisharaf, E., Salehi, M.** "A predictive model to estimate microplastic flux in urban environments." (In Preparation).
3. **Ibna Hafiz, A.M., Zolfaghari, S., Bashir, A., Ahmadisharaf, E., Salehi, M.** "Impacts of Hurricane Debby on microplastic characteristics in urban drainage networks." (In Preparation).
4. **Ibna Hafiz, A.M., Datta, D.K., Bashir, A., Ahmadisharaf, E., Salehi, M.** "Microplastic characteristics in urban agriculture under various weather patterns." *ACS ES&T* (Under Review).

5. **Ibna Hafiz, A.M.**, Rabby, S.H., Ahmadisharaf, E., Sridharan, V., Kumar, S., Zhang, H.X., Chao, X., Guzman, S., Quinn, N.W.T. "Opportunities to improve TMDLs using artificial intelligence and machine learning." *Journal of Environmental Engineering* (Under Review).
6. **Ibna Hafiz, A.M.**, Ahmadisharaf, E., Salehi, M., van Emmerik, T.H.M., Farner, J., Galloway, T., White, J.C., Zhang, Y., Han, N., Zongguo, W. "A Global Dataset of Microplastics in Urban Stormwater Runoff (2018–2024)." *Nature Scientific Data* (Under Review).
7. Rabby, S.H., Ahmadisharaf, E., Khan, M.I.S., **Ibna Hafiz, A.M.**, Sun, X., Cohen, M., Rains, M., Van Emmerik, T.V., Salehi, M., Kranz, S., Wahl, T., Mishra, A., Sadegh, M., AghaKouchak, A., Golden, H., Moradkhani, H. "Impacts of compound hydroclimatic events on coastal water quality." *Reviews of Geophysics* (Under Review).

Journal Articles

1. **Ibna Hafiz, A.M.**, Ahmadisharaf, E., Salehi, M., Farner, J., White, J.C., Zeng, E.Y., & Nazari, B. (2025). "A Review of Processes and Models for the Export of Microplastics From Terrestrial to Aquatic Systems." *WIREs Water*, 12(1), e70004. <https://doi.org/10.1002/wat2.70004>
2. **Ibna Hafiz, A.M.** (2023). "Intergenerational research on environmental change (Bangladesh, Asia)." In Oral History Society, International work. *Oral History*, 51(1), 34–41. <https://www.jstor.org/stable/10.2307/48743712>

Book Chapters

1. Rabby, S.H., Sun, X., **Ibna Hafiz, A.M.**, Yan, Z., Imtiaz, S.U., Azadani, M.N., Pakdehi, M., Moumouni, A.S., Ahmadisharaf, E., & Alamdari, N. (2026). "Chapter 11—Application of machine learning methods in water quality modeling." In Z. Lin & W.-C. Chou (Eds.), *Machine Learning and Artificial Intelligence in Toxicology and Environmental Health* (pp. 271–309). Academic Press. <https://doi.org/10.1016/B978-0-443-30010-3.00016-7>
2. Salehi, M., **Hafiz, A.M.I.**, Ahmadisharaf, E., Jazaei, F. (2025). "Release of Microplastics by Terrestrial Sources into Freshwater Environments." In: Bala, K., Nogueira, R., Darbha, G.K., Weichgrebe, D. (eds) *Occurrence, Detection, and Fate of Microplastics in Freshwater Ecosystems*. Springer, Singapore. https://doi.org/10.1007/978-981-95-0225-7_2

Conference Proceedings

1. **Ibna Hafiz, A.M.**, Greru, C., Warrington, S. (2022). "Oral History, Mapping and Photography in the Bangladesh Sundarbans." *Living Deltas Hub*. livingdeltas.org
2. Pantho, M.J., Ishmam, Z.S., **Ibna Hafiz, A.M.**, Rahman, M.M. (2022). "NDVI: Detection of vegetation change using Remote Sensing and GIS. A study of Barishal City Corporation, Bangladesh." *6th International Conference on Civil Engineering for Sustainable Development (ICCESD)*.
3. **Ibna Hafiz, A.M.**, Billah, M. (2021). "Treatment of Raw Textile Effluent using Hybrid Constructed Wetland." *International Conference on Water and Flood Management (ICWFM)*, 2021.

PRESENTATIONS

Oral Presentations

1. **Ibna Hafiz, A.M.**, Ahmadisharaf, E., Salehi, M., Feng, D., Abdolali, A. (2026). "Satellite-based microplastic detection in marine environments using machine learning algorithms." *IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, Washington, DC.
2. **Ibna Hafiz, A.M.**, Salehi, M., Ahmadisharaf, E. (2026). "Standardizing microplastic data in urban runoff: Development and applications of the DURUM database." *EWRI World Environmental & Water Resources Congress*, Mobile, AL.
3. **Ibna Hafiz, A.M.**, Ahmadisharaf, E., Salehi, M., Feng, D. (2025). "Satellite-Based Marine Microplastic Detection Using Machine Learning Algorithms." *AGU Annual Meeting 2025*, New Orleans, LA.

4. **Ibna Hafiz, A.M.**, Bashir, A., Zolfaghari, S., Legrand, F., Ahmadisharaf, E., Salehi, M. (2025). "Hurricane-Induced Microplastics Contamination in Urban Drainage Systems: A Case Study of Tallahassee following Hurricane Debby." *EWRI Congress 2025*, Anchorage, AK.
5. **Ibna Hafiz, A.M.**, Bashir, A., Legrand, F., Ahmadisharaf, E., Salehi, M. (2025). "Microplastic Transport in Urban Agricultural Systems: Characterization, Drivers, and Implications for Stormwater Management." *EWRI Congress 2025*, Anchorage, AK.
6. **Ibna Hafiz, A.M.**, Ahmadisharaf, E., Salehi, M. (2024). "The Export of Microplastics to Urban Agricultural Farms Under Different Weather Patterns." *Leon County Science Advisory Committee meeting*, 2024.

Poster Presentations

1. **Ibna Hafiz, A.M.**, Jalilvand, E., Ahmadisharaf, E. (2026). "Deep learning-based land cover change detection following Hurricane Michael using high-resolution multi-temporal satellite imagery." *IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, Washington, DC.
2. Zolfaghari, S., **Ibna Hafiz, A.M.**, Ahmadisharaf, E., Salehi, M. (2025). "Short- and mid-term impacts of Hurricane Debby on microplastic pollution in urban drainage systems of Tallahassee, Florida." *ACS Midwest Regional Meeting*, Columbia, MO.
3. **Ibna Hafiz, A.M.**, Ahmadisharaf, E., Salehi, M. (2024). "The Role of Microplastic Transport in Enhancing Stormwater Management." *Florida Stormwater Association Winter Conference*, 2024, Kissimmee, FL.
4. **Ibna Hafiz, A.M.**, Ahmadisharaf, E., Jalilvand, E. (2024). "Changes in Land Cover Aftermath of Hurricane Events: The case of Hurricane Michael." *AGU Chapman Conference on Remote Sensing of the Water Cycle: Sensors to Science to Society*, 2024, Honolulu, HI.

AWARDS AND RECOGNITIONS

- **CEE Graduate Student Research Excellence Poster Competition (Fall 2025)** – Winner (First Prize – \$700).
- **CEE Graduate Research Excellence Award (2025)** – \$1,000.
- **CEE Graduate Research Excellence Poster Competition (Spring 2025)** – Winner (Second Prize – \$3,000).
- **2024 Florida Stormwater Association Educational Foundation Scholarship** (\$2,000).
- **Travel grant** (\$1,300) for the *AGU Chapman Conference on Remote Sensing of the Water Cycle: Sensors to Society*, 2024, Honolulu, HI.
- **Florida State University Graduate School Dissertation Research Grant** (\$1,000).

PROFESSIONAL SERVICES

- Member (Elect), EWRI-TMDL Analysis and Modeling Task Committee (November 2024 – Present).
- Session Convener, 2025 World Environmental & Water Resources Congress, Anchorage, Alaska.
- Abstract Reviewer, 2026 World Environmental & Water Resources Congress, Mobile, Alabama.

TECHNICAL SKILLS

- **Programming & Analysis:** Python, MATLAB
- **Geospatial & Modeling:** ArcGIS, Google Earth Engine, SWMM, HEC-RAS, HEC-HMS, AutoCAD
- **Visualization & Scientific Tools:** Origin, PyMOL, Adobe Illustrator
- **Documentation:** LaTeX, MS Office

MEDIA AND FEATURES

- [Grad Impact Profile](#) – *Office of Graduate Fellowship and Awards*

REFERENCES

1. **Dr. Ebrahim Ahmadisharaf**

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