SHAH SAKI, M.Sc.
Ph.D. Student, Environmental Engineering
Department of Civil and Environmental Engineering
University of Connecticut (UConn), Storrs, CT
shah.saki@uconn.edu | linkedin.com/in/shahsaki | (860) 208-4793

EDUCATION

- **Ph.D. Candidate, Environmental Engineering**
  University of Connecticut, Storrs, CT
  Expected Spring 2026
  Dissertation: *Spatio-Temporal Dynamics of Hydroclimatic Extremes and Their Compound Impacts on Electric Grid*
- **M.Sc., Civil and Environmental Engineering**
  University of California, Los Angeles (UCLA)
  June 2018
- **B.Sc., Water Resources Engineering**
  Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh
  March 2016

RESEARCH & PROFESSIONAL EXPERIENCE

- **Graduate Assistant**
  Department of Civil and Environmental Engineering, UConn
  August 2021 – Present

Project 1: ***" Characterizing CONUS-wide Spatio-temporal Changes in Daily Precipitation, Flow and Variability of Extremes."***

- Analyzed hydrologic cycle behavior and spatial–temporal variability of extremes at the CONUS scale.
- Developed representative extreme-event thresholds to capture variability and long-term trends.

Project 2: ***"A Multi-Year Analysis of Impact of Heatwaves and Compound Weather Events on Power Outages."***

- Built a statistical framework linking heat index, wind, precipitation, and gust characteristics to outage behavior.
- Integrated multi-source meteorological datasets to characterize compound hazard signatures.

Project 3: ***"Estimating Power Outage Risk from Heatwaves and Compound Weather Events Under Future Climate Projections."***

- Developed a climate-informed statistical model to estimate outage risk during heatwaves and compound extremes.
- Leveraged high-resolution future climate projections to quantify risk shifts across the CONUS.

- **Climate Data PhD Student Analyst**
  Electric Power Research Institute (EPRI)
  May 2024 – December 2024
  - Evaluated outage-driven heat exposure under current and future climate scenarios.
  - Used climate projections to quantify shifts in population exposure during outage events.
- **National Water Center Innovators Program Summer Institute Fellow**
  National Water Center (In Support of the National Science Foundation and National Oceanic and Atmospheric Administration)
  June 2022 – July 2022
  - Applied ML-based techniques for large-scale prediction of channel roughness coefficients.
  - Developed workflows integrating hydrologic modeling and remote sensing datasets.
- **Lecturer,**
  Presidency University, Dhaka, Bangladesh
  January 2019 – September 2020
  Courses: Surveying, Fluid Mechanics, Open Channel Flow, Introduction to GIS, GIS Lab

- Delivered lectures and laboratory instruction to undergraduate students.
- Developed assessments, evaluated student performance, and conducted practical training.

- **Research Assistant**
  Nuffic NICHE BGD 155 Project, BUET & UNESCO-IHE
  April 2016 – February 2017
  - Conducted data collection, analysis, modeling, and report preparation for a collaborative water resources project.
  - Presented findings to technical and academic stakeholders.

KEY SKILLS

- **Programming**: Proficient in Python, R, and LaTeX for analysis, modeling tasks, and technical documentation.
- **Software**: Skilled in using Microsoft Word, Excel, and PowerPoint for professional reporting, data handling, and presentations.
- **Modeling Systems**: Experienced with HEC RAS 1D, ArcGIS, and QGIS for hydraulic modeling, spatial analysis, and geospatial workflows.
- **Technical Skills:** Applied machine learning and high-performance computing techniques for advanced analysis and large dataset processing.
- **Communication:** Strong oral and written communication skills demonstrated through reports, presentations, and professional interactions.
- **Collaboration:** Effective at working with diverse groups and contributing to multidisciplinary team environments.

LEADERSHIP AND AWARDS

- **Vice President,** John Lof Leadership Academy (JLLA) at UConn, 2024–2025
- **Senator,** Graduate Student Senate (GSS), UConn, 2023–2024
- **Member,** Student Association of Graduate Engineers (SAGE), 2021–Present
- **Member,** American Geophysical Union, 2021–Present
- **Member,** American Meteorological Society, 2024–Present
- Merit Scholarship, BUET, 2011–2012

PUBLICATIONS

Journal Publications:

1. **Saki, S.,** Sofia, G., Kar, B., Anagnostou, E. (2025). *A multi-year analysis of the impact of heatwaves and compound weather events on power outages*. Scientific Reports, 15(1), 30846. https://www.nature.com/articles/s41598-025-15065-x
2. Rahat, S. H., **Saki, S.,** Khaira, U., Biswas, N., Dollan, I., Wasti, A., Miura, Y., Bhuiyan, M. A. E., Ray, P. (2024). *Bracing for impact: How shifting precipitation extremes may influence physical climate risks in an uncertain future*. Scientific Reports, 14, 17398.
3. Mehedi, M. A. A., **Saki, S.**, Patel, K., Shen, C., Cohen, S., Smith, V., Rajib, A., Anagnostou, E., Bindas, T., Lawson, K. (2024). *Spatiotemporal Variability of Channel Roughness and its Substantial Impacts on Flood Modeling Errors*. *Earth's Future*. https://doi.org/10.1029/2023EF004257
4. **Saki, S.**, Sofia, G., Anagnostou, E. (2023). *Characterizing CONUS-Wide Spatio-temporal Changes in Daily Precipitation, Flow, and Variability of Extremes*. *Journal of Hydrology*. .https://doi.org/10.1016/j.jhydrol.2023.130336
5. Rahat, S. H., Steissberg, T., Chang, W., Chen, X., Mandavya, G., Tracy, J., Wasti, A., Atreya, A., **Saki, S.**, Bhuiyan, M. A. E., Ray, P. (2023). *Remote sensing-enabled machine learning for river water quality modeling under multidimensional uncertainty*. *Science of The Total Environment*. https://doi.org/10.1016/j.scitotenv.2023.165504
6. Yazdan, M. M. S., **Saki, S.**, Kumar, R. (2023). *Untangling Energy Consumption Dynamics with Renewable Energy Using Recurrent Neural Network*. *Analytics*.. https://doi.org/10.3390/analytics2010008
7. **Saki, S.**, Sofia, G., Anagnostou, E. (Working paper). *Compound Weather Hazards and Power Grid Risk in a Warming Climate*.

Conference Proceedings

Poster Presentations

1. **Saki, S.**, Sofia, G., Kar, B., Anagnostou, E., 2024. Energy resilience: Multi-Year Analysis of Heatwave Impacts on Power Outages. AGU Fall Meeting.
2. **Saki, S.**, Sofia, G., Kar, B., Anagnostou, E., 2023. Statistical Approach to Understanding Heatwave and

Thunderstorm Impacts on Power Outages. AGU Fall Meeting.

3. Cerrai, D., Anagnostou, E., Zhang, X., Udeh, K., **Saki, S.**, Filipiak, B., Nyame, S., Yang, F., 2023. Predicting Weather-Related Power Outages in the Northeastern US. AGU Fall Meeting.
4. Mehedi, M. A. A., **Saki, S.**, et al., 2022. Large-Scale Prediction of Channel Roughness Using Machine Learning. AGU Fall Meeting.
5. **Saki, S.**, Sofia, G., Anagnostou, E., 2022. Potential of Gini Index for Extreme Event Prediction in the CONUS. AGU Fall Meeting
6. **Saki, S.**, Sofia, G., Anagnostou, E., 2021. Spatio-temporal Changes in Precipitation and Flows in the CONUS. AGU Fall Meeting.

Oral Presentations

1. **Saki, S.**, Geyman, B., Smith, E., Staid, A., 2024. Implications of Outage-Driven Heat Exposure Under Present and Future Climate Scenarios. AGU Fall Meeting.
2. . Saki, S., Miah, M. M., 2016. Changes in Hydro-morphology of Shitalakhya River using HEC-RAS. ICACE 2016
3. Rahman, M. A., Saki, S., et al., 2016. Salinity intrusion assessment in coastal Bangladesh. ICACE 2016.

REVIEW ACTIVITY

Reviewer for:

- • Journal of the American Water Resources Association (JAWRA)
- • Science of the Total Environment (STOTEN)
- • Journal of Hydrology (JoH)
- • Stochastic Environmental Research and Risk Assessment (SERRA)