MARIAM KHANAM

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Education

Ph.D. in Environmental Engineering University of Connecticut, Storrs, CT Advisor: Prof. Dr. Emmonouil Anospostou	May 2023 (Expected)
M. Sc. in Geography University of Alabama, Tuscaloosa, AL Advisor: Dr. Sagy Cohen	2018
B. Sc. in Water Resources Engineering Bangladesh University of Engineering and Technology	2015

Professional Appointments

Graduate Research Assistant	2018 - Present
Hydrometeorology and Hydrologic Remote Sensing group, University of Connecticut	
Graduate Research Assistant	2016 - 2018
Surface Dynamics Modeling Lab, The University of Alabama	
Graduate Teaching Assistant	Fall 2016
GY 430/530: Geographic Information Systems, The University of Alabama	
GY 202: The Water Planet, Instructor, The University of Alabama	
Research Fellow	Summer 2017
Summer Institute Innovators' Program, National Water Center (NWC), NOAA	
Junior Water Resources Engineer	2015-2016
Resource Planning and Management Consultants (Pvt.) Ltd. (RPMC)	
Research Intern	Summer 2015
Division of Coast Port & Estuary, Institute of Water Modeling (IWM), Bangladesh	

Research Interests

- Flood Geomorphology and land surface processes ٠
- Extreme hazards of climate change era (e.g., Flood, drought, landslides, wildfire) •
- GIS, RS, and AI applications in Hydro-geomorphology •
- Natural and anthropogenic impacts on the future of water ٠

Technical Knowledge

Programming Language:	Python, MATLAB, R, ArcPy
Hydrodynamic Modeling:	HECRAS 2D, Delft 3D, MIKE 21, MIKE URBAN
Hydrologic Modeling:	GSSHA, ADHydro, SWAT, CREST- SVAS
Geospatial/ Remote Sensing:	ArcGIS, QGIS, ERDAS IMAGINE

Research Projects

1.	Mapping Changes in Hydroclimatic risk in High Mountain Asia. Funded by	Fall 2020- Present
	NASA; PI: Efthymios Nikolopoulos (FIT) (HiMAT)	
	Task: Geomorphological mapping of flood prone areas	
2.	Evaluation of Substations Vulnerability of Flooding in Current and Climate	2018-2019
	Change Scenarios (Phase II)- Funded by Eversource; PI: Xinyi Shen	
	(UCONN)	
	Task: Modeling of substation flood vulnerability using HEC-RAS 2D	
3.	Regional Geospatial Modeling Grant funded by NOAA through MSU, The	2016-2018
	University of Alabama; PI: Sagy Cohen (UA)	
	Task: Hydrologic modeling of watersheds in Mississippi	
4.	Design of a Retention/ Infiltration Basin and Bioswales: Alleviating Flooding	2017
	and Water quality & Use Issues Near Bryant-Denny Stadium. Campus Water	
	Matters Challenge- Student Competition; PI: Sagy Cohen (UA)	
	Task: Work as the student team leader; Apply MIKE URBAN to develop	
	a design model for the study area	
5.	US EPA P3 Student Sustainability Program - Phase I, 2017-18, GIS Enabled	2017
	Green Infrastructure Design Tool; PI: Andrew Graettinger (UA)	
	Task: Collaborated with the students and PIs to develop a GIS-based	
	Green Infrastructure Design Tool	
6.	Flood and Riverbank Erosion Risk Management Investment, Bangladesh	2015-2016
	Asian Development Bank (ADB); Water Development Board (BWDB);	
	Northwest Hydraulic Consultants (NHC); Resource Planning and Management	
	Consultants (Pvt.) Ltd. (RPMC)	
	Task: Historical Satellite imagery and field data analysis of the erosion in	
	Jamuna River	

Publications

- 1. **Khanam, M**., Sofia, G., Lu, B., Song, D., Nikolopoulos, E. I. and Anagnostou, E. N.: Predictive Understanding of Flood Impact in Data-Scarce Regions Based on Channel Properties and Storm Characteristics: a Case Study Application in High Mountain Asia (HMA), TBD, In Preparation.
- 2. **Khanam, M**., Sofia, G. and Anagnostou, E. N.: The impact of large floods on channel conveyance, TBD, In Preparation.
- 3. **Khanam, M**., Sofia, G. and Anagnostou, E. N.: To What Extent Do Extreme Storm Events Change Future Flood Hazards? Advances in Water Resources, Submitted.
- 4. **Khanam, M**., Sofia, G., Koukoula, M., Lazin, R., Nikolopoulos, E. I., Shen, X. and Anagnostou, E. N.: Impact of compound flood event on coastal critical infrastructures considering current and future climate, Nat. Hazards Earth Syst. Sci., 21(2), 587–605, doi:10.5194/nhess-21-587-2021, 2021.
- Khanam, M., Sofia, G., Koukoula, M., Lazin, R., Nikolopoulos, E., Shen, X. and Anagnostou, E.: Current and Future Climate Compound-Event Flood Impact on Coastal Critical Infrastructures, Nat. Hazards Earth Syst. Sci. Discuss., 2020, 1–28, 2020. (Preprint)
- 6. Grimley, L., **Khanam, M.**, Tiernan, E. and Tijerina, D.: Hyper-resolution modeling in Urban Landscapes, Natl. Water Cent. Innov. Progr. Summer Inst. Rep. 2017, 23, 2017. (Technical report)
- Chang, J., Garousi-Nejad, I., Grimley, L., He, S., Khanam, M., Madsen, T., Tang, Q., Tiernan, E., Tijerina, D. and Turnipseed10, C.: ADHydro Introduction and Workflow, Natl. Water Cent. Innov. Progr. Summer Inst. Rep. 2017, 6, 2017. (Technical report)
- 8. **Khanam, M.** and Navera, U. K.: Hydrodynamic and morphological analysis of Gorai River using delft 3d mathematical model, in Proceedings of the 3rd International Conference on Civil Engineering for Sustainable Development (ICCESD). Khulna., 2016. (Conference proceedings)

Conference Presentations (Selected)

- 1. **Khanam, M.**, Sofia, G., Nikolopoulos, E. and Anagnostou, E. N.: Predictive understanding of flood impact based on climatic and geomorphologic information: a case study in Nepal, [online] Available from: https://agu.confex.com/agu/fm21/meetingapp.cgi/Paper/1000397 (Accessed 8 June 2022), 2021.
- 2. Khanam, M., Sofia, G. and Anagnostou, E.: The impact of large floods on channel conveyance, in AGU Fall Meeting Abstracts, vol. 2021, pp. EP55A-1064., 2021.
- 3. **Khanam, M**., Sofia, G., Nikolopoulos, E. I. and Anagnostou, E. N.: Identification of hotspots of flood risk in High Mountain Asia region based on geomorphology and climate data, in EGU General Assembly Conference Abstracts, pp. EGU21-13783., 2021.
- 4. **Khanam, M.**, Sofia, G. and Anagnostou, E. N.: Do extreme flood events change future flood hazards? [online] Available from: https://agu.confex.com/agu/fm20/meetingapp.cgi/Paper/759268 (Accessed 27 May 2021), 2020.
- Khanam, M., Sofia, G., Nikolopoulos, E. and Anagnostou, E. N.: The Role of Extreme Events in Altering Hydrologic and Geomorphic Drivers of Flood Hazard: The Colorado 2013 Flood Case Study, [online] Available from: https://agu.confex.com/agu/fm19/meetingapp.cgi/Paper/586086 (Accessed 27 May 2021), 2019.
- 6. **Khanam, M.**, Lazin, R., Koukoula, M., Shen, X., Whitney, M. and Anagnostou, E.: Compound Flood Hazard Scenario for Coastal Electric Power-grid Substations in Connecticut, USA., in Geophysical Research Abstracts, vol. 21., 2019.
- 7. Khanam, M. and Cohen, S.: The impact of bathymetry input on flood simulations, in AGU Fall Meeting Abstracts, vol. 2017, pp. H21D-1490., 2017.
- Grimley, L. E., Tijerina, D., Khanam, M., Tiernan, E. D., Frazier, N., Ogden, F. L., Steinke, R. C., Maxwell, R. M. and Cohen, S.: Grid vs Mesh: The case of Hyper-resolution Modeling in Urban Landscapes, in AGU Fall Meeting Abstracts, vol. 2017, pp. H53F-1541., 2017.

Training & Workshops

- Workshop on GIS Programming & AutoRoute/OSGeo/ QGIS at the University of Alabama arranged by UA-NWC Water Research Group
- Training on GSSHA and ADHyro model at the Summer Institute Innovators' Program, National Water Center; CUAHSI.
- Workshop on HEC-RAS 2D, Google Earth Engine, and SWAT model at the University of Alabama arranged by UA-NWC Water Research Group.

Awards and Fellowships

- University of Connecticut Graduate School Travel Award; Fall 2022
- Civil and Environmental Engineering Pre-Doctoral Fellowship, University of Connecticut, Fall 2021
- Eversource Energy Center Graduate Fellowship (Fall 2018- Summer 2020)
- Eversource Energy Center Travel Award for AGU (Fall 2019, 2021)
- Chairperson's Award 2017, Department of Geography, The University of Alabama
- The University of Alabama Graduate School Travel Award; Fall 2017
- Regional Geospatial Modeling Grant funded by NOAA through MSU, Travel Award; May 2017
- US EPA P3 Student Sustainability Program Phase 1, 2017-18. Travel Award Spring 2018
- NOAA National Water Center Innovators' Program Summer Institute; CUAHSI/NWS/NSF Research & Travel Award
- Campus Water Matters Challenge- Student Competition; Project Implementation and First place award. Media

Voluntary and Other Affiliations

- Reviewer for the Journal of Hydrology, Elsevier publishing
- American Geophysical Union (AGU)
- European Geosciences Union (EGU)