Arslaan Khalid, MS, Ph.D.
Research Scientist
The Water Institute
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EDUCATION

George Mason University	Fairfax, VA	Civil and Infrastructural Engineering	Ph.D., 2020
George Mason University	Fairfax, VA	Civil and Infrastructural Engineering	MS, 2019
National University of Science and Technology	Islamabad, Pakistan	Civil Engineering	BS, 2015

RESEARCH INTERESTS

Real-time flood forecasting, coastal and riverine flood modeling, statistical evaluation, geospatial analysis, and risk estimation, big data analysis, data automation, computer vision, semantic segmentation, subseasonal weather evaluation, storm surge and waves modeling, hydrologic and hydraulic modeling, geo-spatial analysis, numerical modeling, and risk mapping and analysis.

PROFESSIONAL EXPERIENCE

The Water Institute	Research Scientist	2024–Present
Michael Baker International	Computational Modeling and AI/ML Lead	2023–2024
	Senior Coastal Engineer	2020–2023
First Street Foundation	Flood Modeling Consultant	2019–2020
Wood	Technical Professional 1, Water Resources	2019
Atkins, North America	Water Resources Intern II, Riverine Flood Plain Engineering	2018

PROFESSIONAL SOCIETY MEMBERSHIPS

- American Geophysical Union
- Association of State Floodplain Managers

AWARDS AND HONORS

- Virginia Sea Grant Graduate Research Fellowship Award, 2019
- Distinguished Graduate Student Award for outstanding grades in MS degree, 2018
- Best Student Poster Award, AWRA Conference & Best Graduate Teaching Assistant Award, 2018

TEACHING EXPERIENCE

EXAMPLE: Training workshops on (1) SEAWAT and (2) Model Independent Parameter Estimation for the USGS. Multiple training workshops held across the United States. In addition, led trainings at the National Geophysical Research Institute in India, the Mexican Hydrogeologic Association in Sonora Mexico, and at the 21st International Saltwater Intrusion Meeting in Portugal.

Head Teaching Assistant, University of New Orleans Geology Department, New Orleans, LA

COMMUNITY SERVICE

Naval Special Warfare Group 4, Stennis Space Center, MS	Warriors at Ease	2014-present
Add/delete columns as needed!	Organization	Years

TRAINING COURSES

- Two columns of bullet points here, YEAR
- Structured Decision Making
- PEST-Model Independent Parameter Estimation,
- Heat as a Tracer

NOTABLE PROJECTS

Computational Modeling Lead/Computer Vision and Semantic Segmentation   2024
Michael Baker International
Developed computer vision approach to detect first floor elevation from street level imagery and extracted building footprints and landcover from satellite imagery. Also developed pipelines for image acquisition, preprocessing, semantic segmentation, and post-processing.

Computational Modeling Lead/New York City Department of Environmental Protection   2023–2024
Michael Baker International
Performed analysis to generate a subset of storms to reproduce 1% and 0.2% flooding conditions in New York City. Simulated water level and wave conditions using NPCC 2024 sea level rise estimates to produce future-based flood elevation estimates. Developed GIS bathtub toolkits for analysis SLR impacts on the existing BFE.

Coastal Engineer/Mississippi Coastal Flood Maps Revision　　　　2021–2022
Michael Baker International
Performed a comprehensive coastal flood risk study for the coastal Mississippi, including coastal analysis, mapping, DFIRM production, preliminary process support, and community engagement. Programmed various python tools to streamline processes of data cleanup, model simulation, and data analysis.

Coastal Engineer/Cambridge Flood Mitigation Project　　　　2021–2022
Michael Baker International
Developed a risk-based strategy for a flood mitigation project to protect the city against sea level rise combined with major storms. Supported development of innovative hybrid design combining engineered structures with nature-based systems for flood protection due to sea level rise and climate change.

Graduate Research Fellow/Real-time Flood Forecasting Systems　　　　2016–2020
Flood Hazards Research Lab, George Mason University
Developed an integrated flood forecast system to support daily flood forecasting by National Weather Service in Chesapeake Bay. Improved existing state of the art flood forecasting by NWS using ensemble-based flood forecasting. Evaluated subseasonal weather predictions to develop long-term flood prediction systems. Extended iFLOOD to Alaska and Brazil for flood forecasting, Supported development of Flood Factor for First Street Foundation.

PUBLISHED WORKS

Peer-Reviewed Publications

Khalid, A., & Ferreira, C. (2020). Advancing real-time flood prediction in large estuaries: IFLOOD a fully coupled surge-wave automated web-based guidance system. *Environmental Modelling and Software*, *131*.

Khalid, A., Lima, A., Cassalho, F., Miesse, T., & Ferreira, C. (2020). Hydrodynamic and wave responses during storm surges on the southern Brazilian coast: A real-time forecast system. *Water*, *12*(12).

Khalid, A., Bates, P., Quinn, N., Sampson, C., Smith, A., Wing, O., Sosa, J., Savage, J., Olcese, G., Neal, J., Schumann, G., Giustarini, L., Coxon, G., Porter, J., Amodeo, M., Chu, Z., Lewis-Gruss, S., Freeman, N., Houser, T., Delgado, M., … Krajewski, W. (2020). Combined modelling of US fluvial, pluvial and coastal flood hazard under current and future climates. *Water Resources Research*, *57*(2).

Cassalho, F., Miesse, T., Lima, A., Khalid, A., Sutton-Grier, A., & Ferreira, C. (2021). Coastal wetlands exposure to storm surge and waves in the Albemarle-Pamlico estuarine system during extreme events. *Wetlands*, *41*(49).

Khalid, A., Miesse, T., Erfani, E., Thomas, S., Ferreira, C., Pegion, K., Burls, N., & Manganello, J. (2021). Evaluation of storm surge predictability on subseasonal timescales for flood forecasting applications: A case study for Hurricane Isabel and Katrina. *Weather and Climate Extremes*, *34*.