

## Ebrahim Hamidi

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Green card holder

### Education

2021-2025	<b>Ph.D. in Civil and Environmental Engineering</b> <i>Dep. of Civil, Construction and Environment Eng., The University of Alabama, Tuscaloosa, AL</i> ✓ Research Focus: “Compound Flood Assessment Leveraging Remote Sensing Data and Hydrodynamic Simulation in Low-Gradient Coastal Areas”. Advisor: Dr. Hamed Moftakhari
2023-2024	<b>M.Sc. in Civil and Environmental Engineering</b> <i>Dep. of Civil, Construction and Environment Eng., The University of Alabama, Tuscaloosa, AL</i> ✓ Research Focus: “Integration of Remote Sensing Data and Numerical Simulation for Flood Monitoring Assessment”
2007-2010	<b>M.Sc. in Civil and Environmental Engineering</b> (Hydraulic Structures Major) <i>Dep. of Civil and Environment Eng., Shiraz University, Shiraz, Iran</i> ✓ Thesis: “Numerical Solution of Water Wave Propagation and Transformation”. Advisor: Dr. Reza Hashemi
2001-2007	<b>B.Sc. in Civil and Structural Engineering</b> <i>Dep. of Civil Environment Eng., Persian Gulf University, Bushehr, Iran</i>

### Research and Teaching Experiences

May 2025 – Current	<b>Postdoctoral Fellow</b> , North Carolina State University, USA - Working on a project funded by NASA and NSF. - Flood inundation mapping using commercial satellite data such as Capella and Planet. - Coupling ADCIRC and SFINCS for coastal coupling simulations. - Integration of high-resolution satellite data with advanced numerical model for flood mapping.
Jan. 2022 – Apr. 2025	<b>Research Assistant</b> , University of Alabama, USA - Research Assistant: Working on a project funded by NOAA, NSF and USACE.
Feb. 2023 - Aug. 2023	<b>Course Coordinator</b> , National Water Center Program Summer Institute, Tuscaloosa, USA - Working with theme leaders, CUAHSI, NWC, and UA staff to plan, prepare, and organize the SI and assist the research fellows.
Summer 2022	<b>Research Fellow</b> , National Water Center Program Summer Institute, Tuscaloosa, USA - Developing a coastal-inland coupled BMI for Next Gen NWM.
Spring and Fall 2021	<b>Teacher Assistant</b> , University of Alabama, USA - Water Resources Engineering (CE 378) - Hands-on 2D HEC-RAS
Aug. 2010 – May 2012	<b>Teaching</b> (Part-time), Kavar Scientific Applied School, Iran - Natural hazards on buildings and mitigation measures, Masonry building
Summer 2009	<b>Teaching</b> (Part-time), Pars Institute of Higher Education, Mobar, Fars, Iran - Steel structural design, Concrete technology, English for civil engineers
Summer 2005	<b>Grader</b> , Persian Gulf University, Bushehr, Iran - Steel structural design

### Work Experiences

Sep. 2010 - Oct. 2020	<b>Pars Padab Sanaat Consulting Engineers Company</b> , Shiraz, Iran - Lead engineer and engineering project management - Designer of industrial structures and municipal buildings - Designer of hydraulic structures - Mathematical and numerical simulations of physical phenomena - Preparing calculation books and engineering design specifications - Site inspection engineer
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## Research Interests

- Coastal and Ocean Science
- Hydrodynamic and Hydraulic Modeling
- Machine Learning
- Natural Hazard Assessment
- Remote Sensing Data Analysis
- Geospatial Data Analysis
- Advanced Programming
- Parallel and Cloud Computing

## Journal Publications

- **A multi-source remote sensing-based geocommunication tool for global flood monitoring and management**, 2025, Hamidi, Peter, Moftakhari, Moradkhani, *International Journal of Applied Earth Observation and Geoinformation*. <https://doi.org/10.1016/j.jag.2025.104701>
- **Integrating Multi-Source Remote Sensing and Numerical Simulation Approaches for Enhanced Flood Assessment**, 2025, Hamidi, Peter, Nazari, Moftakhari, Anarde, Moradkhani, *Under review at Journal of Hydrology*. <https://dx.doi.org/10.2139/ssrn.5335438>
- **Enhancing Compound Flood Simulation Accuracy and Efficiency in Urbanized Coastal Areas Using Hybrid Meshes and Modified Digital Elevation Model**, 2025, Hamidi, Nazari, Peter, Moftakhari, Moradkhani, *Sustainable Cities and Society*, <https://doi.org/10.1016/j.scs.2025.106184>
- **Coupling Coastal and Hydrologic Models Through Next Generation National Water Model Framework**, 2025, Hamidi et al., *Journal of Hydrologic Engineering*, <https://doi.org/10.1061/JHYEFF.HEENG-6343>
- **Fast Flood Extent Monitoring with SAR Change Detection Using Google Earth Engine**. 2023, Hamidi, Peter, Muñoz, Moftakhari, Moradkhani, *IEEE TGRS*, <https://doi.org/10.1109/TGRS.2023.3240097>
- **Numerical Modelling of the Mild Slope Equation using Localised Differential Quadrature Method**. 2012, Hamidi, Hashemi, Talebbeydokhti, Neill, *Ocean Engineering*, 47, 88–103, <https://doi.org/10.1016/j.oceaneng.2012.03.004>.

## Conference Presentations

- **High Tide Flood Detection Using Multi-satellite Remote Sensing data and In Situ Flood Sensors**, 2025, Hamidi et al., *Accepted at AGU fall meeting, New Orleans, LA, USA*.
- **H GEE-FMF: A Google Earth Engine-Based Machine Learning Framework for Efficient Regional Flood Mapping**, 2025, Zand, Moftakhari, Hamidi, Moradkhani, *Accepted at AGU fall meeting, New Orleans, LA, USA*.
- **Using Satellites to Map Flooding Down East, NC**, 2025, Hamidi et al., *Down East Resilience Network - Fall Meeting, Harkers Island, North Carolina, USA*.
- **Enhanced Flood Assessment Through Numerical Simulations and Multi-Source Remote Sensing Data**, 2024, Hamidi et al., *Accepted at AGU fall meeting, Washington, D.C., USA*.
- **Advanced Flood Mapping using Multi-Source Remote Sensing Data and Hydrodynamic Simulations**, 2024, Hamidi et al., *AWRA 2024 Spring Conference, Tuscaloosa, AL, USA*.
- **Enhancing Compound Coastal Flood Simulation Accuracy and Efficiency with Hybrid Meshes and Corrected Digital Elevation Models**, 2023, Hamidi et al., *AGU fall meeting, Chicago, IL, USA*, <https://ui.adsabs.harvard.edu/abs/2023AGUFMNH23D0739H/abstract>
- **A Google Earth Engine App for Urgent Flood Mapping**, 2023, Hamidi et al., *AGU fall meeting, Chicago, IL, USA*, <https://ui.adsabs.harvard.edu/abs/2023AGUFM.H31Y1839H/abstract>
- **Coupling Coastal and Hydrologic Models Through the First Coastal Basic Model Interface in the Next Generation National Water Model Framework in Low Gradient Coastal Regions of Galveston Bay, Texas, USA**, 2022, Henriksen, Hamidi, et al., *AGU fall meeting*, <http://www.hydroshare.org/resource/379b4c8c663c460d87c246641dc5cea2>.
- **Fast Flood Mapping with Synthetic Aperture Radar Data Using Google Earth Engine**, 2022, Hamidi et al., *AGU fall meeting*, <https://ui.adsabs.harvard.edu/abs/2022AGUFM.H55M0739H/abstract>
- **Rapid Coastal Flood Mapping with SAR data Using Random Forest Technique**. 2021, Hamidi et al., *AGU fall meeting, New Orleans, LA, USA*, <https://ui.adsabs.harvard.edu/abs/2021AGUFM.H35I1138H%2F/abstract>
- **Numerical Modelling of Pennes Bioheat Transfer Equation using Differential Quadrature Method**. 2015, M. E. Hamidi, Feyli, F., *Accepted to 2nd International Conference on Fluid Flow, Heat and Mass Transfer, Ottawa, Ontario, Canada*.

## Data and Code Publications

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- **Fast Flood Monitoring Tool – FFMT**, A Google Earth Engine App for Fast Flood Monitoring, 2024, Hamidi et al., <https://doi.org/10.4211/hs.bf66a6cc204d4691abda18833bf68760>
- **SAR-Based Coastal Flood Extent Estimation Post-Hurricane using Google Earth Engine**. 2022, Hamidi et al., Dataset published on Harvard Dataverse, <https://doi.org/10.7910/DVN/WOTC7E>
- **ArcGIS Script Tool for Flood Extraction from Optical Satellite Data**, 2021, E. Hamidi, <https://github.com/ebrahimhamidi/ArcGIS-Script-Tool-for-Flood-Extraction-from-Optical-Satellite-Data.git>

## Scientific Reviewing

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- Water Resources Research, 2025
- Ocean Modeling, 2025
- Journal of Hydrology, 2025
- International Journal of Digital Earth, 2025
- Remote Sensing Applications Society and Environment, 2025
- Geomatics, Natural Hazards and Risk, 2025
- CLEAN - Soil, Air, Water, 2025
- Environmental Modelling and Software, 2025
- Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2025, 2024 and 2023
- International Journal of Disaster Risk Science, 2024
- Journal of Hydrologic Engineering, 2024
- Scientific Reports, 2024
- Remote Sensing of Environment, 2023
- Proceedings of the Institution of Mechanical Engineers, Part M: Journal of Engineering for the Maritime Environment, 2014

## Honors and Award

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- Vice President of Postdoctoral Association at North Carolina State University, Fall 2025
- **Editor's Choice Article for the Apr. 2025** Issue of Journal of Hydrologic Engineering published by ASCE.
- CUAHSI's Hydroinformatics Innovation Fellowship Award, 2023 for **Fast Flood Monitoring Tool – FFMT**
- Appointed as **Course Coordinator** at the National Water Center Innovators Summer Program, 2023
- The National Water Center Innovators Program Award, 2022

## Selected Workshops

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- Monitoring Global Terrestrial Surface Water Height using Remote Sensing, NASA's Applied Remote Sensing Training (ARSET), 2025
- Spatial Data Science: The New Frontier in Analytics, 2024, ESRI
- Disaster Assessment Using Synthetic Aperture Radar, NASA's Applied Remote Sensing Training (ARSET), 2022
- Geospatial Storytelling, 2021 BRIGHT online workshop, NCAR
- Hydrodynamic modeling using SCHISM, 2021 NOAA SCHISM online boot camp

## Software, Programming & Cloud Platform Skills

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- **Programming:** Python, R, MATLAB, C, C++, JavaScript on Google Earth Engine
- **Parallel:** Multithreaded Program (OpenMP), Message-Passing Program (MPI)
- **Software:**
  - GIS:** QGIS, ArcGIS pro, ERDAS IMAGINE, SNAP, ArcGIS Drones2Map, ...
  - Hydrodynamics:** Delf3D-FM, 2D HEC-RAS, ADCIRC+SWAN, SFINCS, OpenFoam, National Water Model, GeoClaw, ...
  - Structural:** AutoCad, Sap, Safe, Etabs, ...
  - General:** Microsoft Office, ...

## Online Activities

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- [Google Scholar](https://scholar.google.com/citations?user=SQgEMXAAAAAJ&hl=en) [https://scholar.google.com/citations?user=SQgEMXAAAAAJ&hl=en]
- [LinkedIn](https://www.linkedin.com/in/ebrahim-hamidi-30960b69) [https://www.linkedin.com/in/ebrahim-hamidi-30960b69]
- [GitHub](https://github.com/ebrahimhamidi) [https://github.com/ebrahimhamidi]
- [Personal Webpage](https://ebrahimhamidi.com/) [https://ebrahimhamidi.com/]

## Extracurricular Activities

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- Mountain and Rock Climbing, Swimming, Basketball, Skiing, Piano, and Books

## References

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- **Dr. Katherine Anarde**, *Department of Civil, Construction and Environmental Engineering, North Carolina State University*, [kanarde@ncsu.edu](mailto:kanarde@ncsu.edu)
- **Dr. Hamed Moftakhari**, *Department of Civil, Construction and Environmental Engineering, University of Alabama*, Contact: +1 (205) 348-0239, [hmoftakhari@eng.ua.edu](mailto:hmoftakhari@eng.ua.edu)
- **Dr. Brad Peter**, *Department of Geosciences, The University of Arkansas*, Contact: +1 (479) 575-5964, [bradp@uark.edu](mailto:bradp@uark.edu)
- **Dr. Hamid Moradkhani**, *Department of Civil, Construction and Environmental Engineering, University of Alabama*, Contact: +1 (205) 348-9125, [hmoradkhani@ua.edu](mailto:hmoradkhani@ua.edu)
- **Dr. Sagy Cohen**, *Department of Geography, University of Alabama*, Contact: +1 (205) 348-5860, [sagy.cohen@ua.edu](mailto:sagy.cohen@ua.edu)
- **Dr. Reza Hashemi**, *Department of Ocean Engineering, University of Rhode Island*, Contact: +1 (401) 874-6217, [reza\\_hashemi@uri.edu](mailto:reza_hashemi@uri.edu)