

Ebrahim Hamidi

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Green card holder

Education

2021-2025	Ph.D. Candidate in Civil and Environmental Engineering <i>Dep. of Civil, Construction and Environment Eng., The University of Alabama, Tuscaloosa, AL</i> ✓ Research Focus: "Multi-hazard risk analysis of coastal compound flooding". Advisor: Dr. Hamed Moftakhari
2023-2024	M.Sc. in Civil and Environmental Engineering <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	M.Sc. in Civil and Environmental Engineering (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.Sc. in Civil and Structural Engineering <i>Dep. of Civil Environment Eng., Persian Gulf University, Bushehr, Iran</i>

Research Interests

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| - Geospatial Data Analysis | - Remote Sensing Data Analysis |
| - Hydrodynamic and Hydraulic Modeling | - Flood Inundation Mapping |
| - Machine Learning | - Advanced Programming |
| - Natural Hazard Assessment | - Parallel and Cloud Computing |

Software, Programming & Cloud Platform Skills

- **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, ...
Simulation: Delf3D-FM, 2D HEC-RAS, SWAN, OpenFoam, National Water Model, GeoClaw, ...
General: AutoCad, Microsoft Office, Sap, Safe, Etabs, ...

Research and Teaching Experiences

May 2025 – Current	Postdoctoral Fellow , North Carolina State University, USA - Working on a project funded by NASA and NSF. - Investigates the effects of short-term storm events—such as tropical cyclones—on coastlines. - Focuses on the long-term impacts of sea level rise on coastal communities, with projects examining frequent “sunny day” flooding.
Jan. 2022 – Apr. 2025	Research Assistant , University of Alabama, USA - Research Assistant: Working on a project funded by NOAA, NSF and USACE.
Feb. 2023 - Aug. 2023	Course Coordinator , 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	Research Fellow , National Water Center Program Summer Institute, Tuscaloosa, USA - Developing a coastal-inland coupled BMI for Next Gen NWM.
Spring and Fall 2021	Teacher Assistant , University of Alabama, USA - Water Resources Engineering (CE 378) - Hands-on 2D HEC-RAS
Aug. 2010 – May 2012	Teaching (Part-time) , Kavar Scientific Applied School, Iran - Natural hazards on buildings and mitigation measures, Masonry building
Summer 2009	Teaching (Part-time) , Pars Institute of Higher Education, Mobar, Fars, Iran - Steel structural design, Concrete technology, English for civil engineers
Summer 2005	Grader , Persian Gulf University, Bushehr, Iran - Steel structural design

Work Experiences

Sep. 2010 - Oct. 2020

Pars Padab Sanaat Consulting Engineers Company, 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

Journal Publications

- **Global Flood Monitoring and Management Through Multi-Source Geo-Communication Tool**, 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, et al., *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, Hasbemi, Talebbeydokhti, Neill, *Ocean Engineering*, 47, 88–103, <https://doi.org/10.1016/j.oceaneng.2012.03.004>

Conference Presentations

- **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.H35I1138F1%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

- **Fast Flood Monitoring Tool – FFMT**, A Google Earth Engine App for Fast Flood Monitoring, 2024, Hamidi et al., <https://doi.org/10.4211/hs.bf66a6a204d4691abda18833bf68760>
- **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

- Water Resources Research, 2025
- Ocean Modeling, 2025
- International Journal of Digital Earth, 2025
- Remote Sensing Applications Society and Environment, 2025
- Geomatics, Natural Hazards and Risk, 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

- 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

- Spatial Data Science: The New Frontier in Analytics, 2024, ESRI
- NASA Applied Remote Sensing training on Disaster Assessment Using Synthetic Aperture Radar, 2022
- Geospatial Storytelling, 2021 BRIGHT online workshop, NCAR
- Hydrodynamic modeling using SCHISM, 2021 NOAA SCHISM online boot camp

Online Activities

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

Extracurricular Activities

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

References

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