

Ebrahim Hamidi

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Employment Authorization Document (EAD) card holder

Education

- 2021-Current **Ph.D. Candidate in Civil and Environmental Engineering**
Dep. of Civil, Construction and Environment Eng., The University of Alabama, Tuscaloosa, AL
✓ *Research Focus: "Multi-hazard risk analysis of coastal compound flooding". Advisor: Dr. Hamed Moftakbari*
- 2023-2024 **M.Sc. in Civil and Environmental Engineering**
Dep. of Civil, Construction and Environment Eng., The University of Alabama, Tuscaloosa, AL
✓ *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)**
Dep. of Civil and Environment Eng., Shiraz University, Shiraz, Iran
✓ *Thesis: "Numerical Solution of Water Wave Propagation and Transformation". Advisor: Dr. Reza Hasbemi*
- 2001-2007 **B.Sc. in Civil and Structural Engineering**
Dep. of Civil Environment Eng., Persian Gulf University, Bushehr, Iran

Research Interests

- Geospatial Data Analysis
- Hydrodynamic Simulation
- Compound Coastal Flood Hazards
- Remote Sensing
- Machine Learning
- 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, Next-Gen National Water Model **General:** AutoCad, Microsoft Office, ...

Research and Teaching Experiences

- Jan. 2022 - Current **Research Assistant**, *University of Alabama, USA*
- Research Assistant: Working on a project funded by 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 projects management, design of industrial structures, municipal buildings and Hydraulic structures

Journal Publications [Google Scholar](#)

- **Enhancing Compound Flood Simulation Accuracy and Efficiency in Urbanized Coastal Areas Using Hybrid Meshes and Modified Digital Elevation Model**, 2024, Hamidi, et al., *Sustainable Cities and Society*, <http://dx.doi.org/10.2139/ssrn.4971578>
- **Multi-Source Geo-Communication Tool for Global Flood Monitoring and Management**, 2024, Hamidi, Peter, Moftakbari, Moradkhani, *under review*.

- **Coupling Coastal and Hydrologic Models Through Next Generation National Water Model Framework**, 2024, Hamidi et al., *Journal of Hydrologic Engineering*, [DOI: 10.1061/JHYEFF/HEENG-6343](https://doi.org/10.1061/JHYEFF/HEENG-6343)
- **Fast Flood Extent Monitoring with SAR Change Detection Using Google Earth Engine**. 2023, Hamidi, Peter, Muñoz, Moftakbari, 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.H35I1138I%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.bf66a6cc204d4691abda18833bj68760>
- **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>

Scientific Reviewing

- Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 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

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

Honors and Award

- CUAHSI's Hydroinformatics Innovation Fellowship Award, 2023 for [Fast Flood Monitoring Tool – FFMT](#)
- The National Water Center Innovators Program Award, 2022

Extracurricular Activities

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

References

- **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