

Hamid Dashti

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<https://hamiddashti.github.io>

<https://github.com/hamiddashti>

Early-career scientist with a strong background in computational research in climate and Earth system modeling and advanced geospatial data analysis. Proven track record of leadership and collaboration.

Core Skills

- Compile, run complex models, implement machine learning algorithms, and design, scale, and optimize computational workflows on HPC/HTC platforms.
- Proficient in scientific Python (e.g., Dask, Xarray, Sklearn), shell scripting, and R. Expertise in scientific file formats including HDF5, NetCDF, and Zarr, as well as documentation tools such as Jupyter Notebook and GIT. (Example: <https://github.com/hamiddashti/earthlab>)
- Actively expanding expertise in computational scaling techniques, including Apache Spark, PyTorch, and AWS.
- Analyze climate and Earth system models (e.g., WRF, CLM) and large, complex environmental and geospatial datasets (Example: https://github.com/hamiddashti/ED_BSU).
- Proven track record of organizing workshops, conducting outreach activities, and engaging with the scientific community.

Research Experience

Postdoctoral Research Associate, University of Wisconsin-Madison 2021-Present

- Analyzed high-resolution satellite data over the Arctic region to study disturbances in the region.
- Compiled and ran ED ecosystem dynamic model and DART optical model on UW-Madison's CHTC and the group's workstation for global land cover change modeling and remote sensing analyses.
- Provided mentorship, teaching, and collaboration with graduate students and engaged in their various research projects.

Postdoctoral Research Associate, University of Arizona 2019-2021

- Process climate data including albedo, evapotranspiration, and land surface temperature to quantify changes in the Earth's surface energy balance.
- Develop a data assimilation framework by integrating CLM model and a data assimilation framework on NCAR's Cheyenne HPC.
- Chair of the science outreach committee at the UA Postdoctoral Association.

Spatial Sciences Innovators 2012-2014

- Co-founded and served as a board member and head of a science group.

- Completed multiple projects in geographic information systems (GIS) and remote sensing of the environment.
- Led multiple workshops on the application of geospatial data in natural resource management.

Educational Background

Ph.D. Geosciences Boise State University Boise, ID	2019
M.S. Remote Sensing and GIS Shahid Beheshti University Tehran, Iran	2011
B.S. Natural Resources Engineering Gorgan University Gorgan, Iran	2008

Scientific Community Involvement

- Involved in NASA Surface Biology, Geology Designated Observable Algorithm Development
- Member of National Ecological Observatory Network Remote Sensing Algorithms Design

Selected Publications (out of 15)

- **Dashti, H.**, Smith, W. K., Huo, X., Fox, A., Javadian, M., Devine, C. J., Behrangi, A., & Moore, D. J. P. (2022). Underestimation of the impact of land cover change on the biophysical environment of the Arctic and Boreal Region of North America. *Environmental Research Letters*.
- Enterkine, J., **Dashti, H.**, Caughlin, T. T., & Glenn, N. F. (2023). Applied soft classes and fuzzy confusion in a patchwork semi-arid ecosystem: Stitching together classification techniques to preserve ecologically-meaningful information. *Remote Sensing of Environment*.
- **Dashti, H.**, Pandit, K., Glenn, N. F., Shinneman, D. J., Flerchinger, G. N., Hudak, A. T., ... & Fellows, A. W. (2021). Performance of the ecosystem demography model (EDv2.2) in simulating gross primary production capacity and activity in a dryland study area. *Agricultural and Forest Meteorology*, 297, 108270.
- Fox, A. M., Huo, X., Hoar, T. J., **Dashti, H.**, Smith, W. K., MacBean, N., et al. (2022). Assimilation of global satellite leaf area estimates reduces modeled global carbon uptake and energy loss by terrestrial ecosystems. *Journal of Geophysical Research: Biogeosciences*.