Hamed Alemohammad

halemohammad@clarku.edu | hamedalemo.github.io | 508-849-2349

PROFESSIONAL EXPERIENCE

Clark University

Associate Professor, Graduate School of Geography	Jan. 2023 – present
Director, Center for Geospatial Analytics	Jan. 2023 – present

Radiant Earth Foundation

Executive Director	Sep. 2020 – Oct. 2022
Chief Data Scientist	May 2019 – Oct. 2022
Lead Geospatial Data Scientist	Jun. 2018 – Apr. 2019
Senior Geospatial Data Scientist	Sep. 2017 – May 2018

Influunt

Technical Advisor	Aug. 2021 – Dec. 2022

Earthlab AI

Technical Advisor	Apr. 2020 – Jul. 2021

Columbia University

Postdoctoral Research Scientist	Aug. 2016 - Aug. 2017

Massachusetts Institute of Technology

Postdoctoral Research Associate	Sep. 2014 - Aug. 2016
Research Assistant	Sep. 2009 - Sep. 2014

Sharif University of Technology

Research Assistant	Sep. 2007 - Jun. 2009

UNESCO Regional Center on Urban Water Management

Assistant Program Specialist	Oct. 2006 - Mar. 2009

EDUCATION

Ph.D., Civil and Environmental Engineering, Massachusetts Institute of Technology (MIT)	2014
M.Sc., Water Resources Engineering, Sharif University of Technology	2009
B.Sc., Civil Engineering, Sharif University of Technology	2007

LEADERSHIP EXPERIENCE

- Co-Organizer, ICLR Workshop on Machine Learning for Remote Sensing, 2023-2024
- Selected Member of Department of Energy, Biological and Environmental Research Advisory Committee (BERAC), Subcommittee on Unified Data, 2023
- Session Chair, 2023 AGU Fall Meeting
- Member of GEO Expert Advisory Group on Global Earth Observation System of Systems (GEOSS), 2022
- Session Co-Chair, 2022 ESA Living Planet Symposium
- Member of Industrial Advisory Board, NSF AI Institute for Research on Trustworthy AI in Weather, Climate, and Coastal Oceanography (AI2ES), 2021-2022
- Member of Technical Advisory Group, Enabling Crop Analytics At Scale (ECAAS) Initiative, Bill & Melinda Gates Foundation, 2020-2022
- Member of Agriculture Technical Advisory Panel, Lacuna Fund, 2020-2022
- Member, NASA ESDS Working Group on Machine Learning Capacity Development, 2020-2022
- Session Co-Organizer, 2021 ESIP Summer Meeting
- Session Co-Convener, 2021 EGU General Assembly
- Session Chair, 2016-2020 AGU Fall Meeting
- Lead Organizer, Workshop on Advancing Application of Machine Learning Tools for NASA's Earth Observation Data, 2020
- Co-Organizer, ICLR Workshop on Computer Vision for Agriculture (CV4A), 2020

- Member, AGU Remote Sensing Technical Committee, 2017-present
- Member of Program Committee, 2019 Analysis Ready Data Workshop on Satellite Data Interoperability
- Lead Organizer, Workshop on Machine Learning for Global Land Cover Classification, 2018
- Session Chair, 2017 IEEE International Geoscience and Remote Sensing Symposium
- Member of the organizing committee, Environmental Sciences Seminar Series, Parsons Laboratory for Environmental Science and Engineering, MIT, 2015-2016.
- Member, AGU's *Eos.org* Advisory Panel, 2014-2016.
- Founder and Director, 1st MIT Water Night, 2013.
- Student Representative, AGU Global Environmental Change (GEC) Focus Group, 2011-2014.
- Member of the organizing committee, MIT Energy Night, 2011.
- Member of the organizing committee, Food, Water and Energy Workshop, MIT Energy Conference, 2011.
- Student Representative, Committee on Student Life, MIT, 2011-2012.
- Co-Chair, International Students Mentorship Program, MIT, 2011.
- Vice President, Persian Student Association (PSA), MIT, 2011-2012.
- Secretary of the Seminar, Water, Hydraulic Structures and Environment, Sharif University of Technology, 2008.
- Member of Central Board, Nahal NGO, 2008.
- Member of Water Working Group, Nahal NGO, 2007.

GRANTS

PI

- Evaluating Performance of a Foundation Model for Optical Earth Observation on Downstream Tasks, *NASA IMPACT*, $150,360 (2023)
- AgriFieldNet: Benchmark Training Data and Model for Smallholder Agricultural Field Boundary and Crop Type Detection, *Enabling Crop Analytics at Scale (ECAAS) AGData Acceleration Facility an initiative of Bill & Melinda Gates Foundation*, $234,000 (2021)
- Advancing an Open-Access Repository for Earth Observation Training Data and Machine Learning Models, *NASA ACCESS ROSES-2019*, $1,640,000 (2020)
- An Innovative Agricultural Ground Data Collection and Exchange Ecosystem, *Grand Challenges an initiative of Bill & Melinda Gates Foundation*, $100,000 (2020)
- Expanding a Collaborative Community of Practice for Advancing Geospatial Machine Learning Applications in Africa, *GIZ FAIR Forward*, $135,000 (2020)
- Generating Synthetic Agricultural Ground Reference Data from Satellite Observations, *Grand Challenges an initiative of Bill & Melinda Gates Foundation*, $200,000 (2019)
- An Expert Workshop on Advancing Application of Machine Learning Tools for NASA's Earth Observation Data, *NASA ROSES-2019*, $166,000 (2019)

CO-I

- Radiant Earth Foundation Core Funding to Impact Global Development with Artificial Intelligence and Earth Observations, *Omidyar Network,* $1,000,000 (2019)
- Generating a Training Library for Land Cover Classification to Advance Global Development and Humanitarian Response, *Schmidt Futures,* $383,000 (2018)

Member of the team

- Creating a Machine Learning Image Library of African Crops, *McGovern Foundation*, $100,000 (2018)

PATENT

McLaughlin D., Entekhabi D., Wojcik R., **Alemohammad S.H.,** Generating Information Conditional on Mapped Measurements, U.S. Patent Application 13/489,762.

JOURNAL PUBLICATIONS

1. Fluhrer A., Jagdhuber T., Montzka C., Schumacher M., **Alemohammad H.,** Tabatabaeenejad A., Kunstmann H., Entekhabi D. (2024), Soil Moisture Profile Estimation by Combining P-band SAR Polarimetry with Hydrological and Multi-Layer Scattering Models, *Remote Sensing of Environment,* 305, 114067,
2. Gurung I., Ramasubhramanian M., Freitag B., Kaulfus A., Maskey M., Ramachandran R., **Alemohammad H.** (2023), Tropical cyclone wind speed estimation: A large scale training data set and community benchmarking. *Earth and Space Science*, 10, e2022EA002693.

3. Fluhrer A, Jagdhuber T, Tabatabaeenejad A, **Alemohammad H**, Montzka C, Friedl P, Forootan E, Kunstmann H. (2022), Remote Sensing of Complex Permittivity and Penetration Depth of Soils Using P-Band SAR Polarimetry. *Remote Sensing,*14(12):2755.
4. Tottrup C., Druce D., Meyer R.P., Christensen M., Riffler M., Dulleck B., Rastner P., Jupova K., Sokoup T., Haag A., Cordeiro M.C.R., Martinez J.-M., Franke J., Schwarz M., Vanthof V., Liu S., Zhou H., Marzi D., Rudiyanto R., Thompson M., Hiestermann J., **Alemohammad H.,** et al. (2022) Surface Water Dynamics from Space: A Round Robin Intercomparison of Using Optical and SAR High-Resolution Satellite Observations for Regional Surface Water Detection, *Remote Sensing*, 14(10).
5. Elmes, A., **Alemohammad S.H.,** et al. (2020), Accounting for Training Data Error in Machine Learning Applied to Earth Observations, *Remote Sensing,* 12(6).
6. **Alemohammad S.H.,** Jagdhuber T., Moghaddam M., Entekhabi D. (2019), Soil and Vegetation Scattering Contributions in L- and P- Band Polarimetric SAR Observations, *IEEE Transactions on Geoscience and Remote Sensing,* 57(11), 8417-8429.
7. Gentine P., Massmann A., Lintner B.R., **Alemohammad S.H.,** et al. (2019), Land–Atmosphere Interactions in the Tropics–A Review, *Hydrology and Earth System Sciences*, 23(10), 4171-4197.
8. Khazaei B., Khatami S., **Alemohammad S.H.,** et al. (2019), Climatic or Regionally Induced by Humans? Tracing Hydro-Climatic and Land-Use Changes to Better Understand the Lake Urmia Tragedy, *Journal of Hydrology*, 569, 203-217.
9. Jagdhuber T., Konings A.G., McColl K.A., **Alemohammad S.H.,** Das N. N., Montzka C., Link M., Akbar R., Entekhabi D. (2019), Physically-Based Modelling of the SMAP Active-Passive Soil Moisture Algorithm, *IEEE Trans. on Geoscience and Remote Sensing*, 57(2), 788-802.
10. **Alemohammad S.H.**, Kolassa J., Prigent C., Aires F., Gentine P. (2018), Global Downscaling of Remotely-Sensed Soil Moisture using Neural Networks, *Hydrology and Earth System Sciences,* 22(10), 5341-5356.
11. Zhang Y., Joiner J., **Alemohammad S.H.,** Zhou S., Gentine P. (2018), A global spatially Continuous Solar Induced Fluorescence (CSIF) dataset using neural networks, *Biogeosciences,* 15(19), 5779-5800.
12. Giardina F., Konings A.G., Kennedy D., **Alemohammad S.H.**, Oliveira R., Uriarte M., Gentine P. (2018), Tall Amazonian forests are less sensitive to precipitation variability, *Nature Geoscience*, 11, 405-409.
13. Gentine P., **Alemohammad S.H.** (2018), RSIF (Reconstructed Solar Induced Fluorescence): a machine-learning vegetation index based on Moderate Resolution Imaging Spectroradiometer surface reflectance and GOME-2 solar induced fluorescence, *Geophysical Research Letters,* 45.
14. **Alemohammad S.H.,** Konings A.G., Jagdhuber T., Moghaddam M., Entekhabi D. (2018), Characterization of Vegetation and Soil Scattering Mechanisms across Different Biomes using P-band SAR Polarimetry, *Remote Sensing of Environment*, 209, 107-117
15. Kolassa J., Reichle R.H., Liu Q., **Alemohammad S.H.,** Gentine P., et al. (2018), Estimating surface soil moisture from SMAP observations using a Neural Network technique, *Remote Sensing of Environment*, 204, 43-59.
16. **Alemohammad S.H.**, Fang B., Konings A.G., Green J., Kolassa J., Prigent C., Aires F., Miralles D., Gentine P. (2017), WECANN: Water, Energy, Carbon, Artificial Neural Network, a Microwave and Solar-Induced Fluorescence based statistical retrieval of surface turbulent fluxes, *Biogeosciences*, 14, 4101-4124.
17. Green J.A., Konings A.G., **Alemohammad S.H.,** Berry J., Entekhabi D., Kolassa J., Lee J.-E., Gentine P. (2017), Regionally strong feedbacks between the atmosphere and terrestrial biosphere, *Nature Geoscience,* 10(6), 410-414.
18. Kolassa J., Gentine P., Prigent C., Aires F., **Alemohammad S.H.** (2017), Soil Moisture Retrieval from AMSR-E and ASCAT Microwave Observation Synergy. Part 2: Product Evaluation, *Remote Sensing of Environment*, 195, 202-217.
19. McColl, K.A., **Alemohammad S.H.,** Akbar R., Konings A.G., Yueh S., Entekhabi D. (2017), The global distribution and dynamics of surface soil moisture, *Nature Geoscience*, 10(2), 100-104.
20. McColl K.A., Roy A., Derksen C., Konings A.G., **Alemohammad S.H.,** Entekhabi D. (2016), Triple collocation for binary and categorical variables: application to validating landscape freeze/thaw retrievals, *Remote Sensing of Environment*, 176, 31-42.
21. **Alemohammad S.H.,** McLaughlin D., Entekhabi D. (2015), Characterization of Precipitation Forcing Uncertainty in Land Data Assimilation Using an Ensemble-Based Bayesian Approach, *Monthly Weather Review*, 143(8), 3276-3299.
22. **Alemohammad S.H.,** McColl K.A., Konings A.G., Entekhabi D., Stoffelen A. (2015), Characterization of Precipitation Product Errors across the United States using Multiplicative Triple Collocation, *Hydrology and Earth System Sciences*, 19(8), 3489-3503.
23. **Alemohammad S.H.,** Entekhabi D., McLaughlin D. (2014), Evaluation of Long-Term SSM/I-based Precipitation Records Over Land, *Journal of Hydrometeorology*, 15(5), 2012-2029.

24. Wojcik R., McLaughlin D., **Alemohammad S.H.,** Entekhabi D. (2014), Ensemble-based Characterization of Uncertain Environmental Features, *Advances in Water Resources*, 70, 36-50.
25. **Alemohammad S.H.,** Ardakanian R. (2010), Sea Level Rise and Global Warming (A Literature Review), Journal of Civil Engineering Islamic Azad University, 2(1), 26-32, *(in Persian)*.

BOOK CHAPTERS

1. Nikravesh M., Ardakanian R., **Alemohammad S.H.,** Institutional Capacity Development of Water Resources Management in Iran, Capacity Development for Improved Water Management, pp. 179-199, CRC Press, 2010.
2. **Alemohammad S.H.,** Ardakanian R., Karimi A., A Framework for Modeling Probabilistic Uncertainty in Rainfall Scenario Analysis, Advances in Hydro-Science and Engineering Volume VIII, Nagoya Hydraulic Research Institute for River Basin Management (NHRI), pp. 472-479, Nagoya, Japan, 2008.

PEER-REVIEWED CONFERENCE PAPERS

1. Godwin D., Li H., Cecil M., **Alemohammad H.,** Seeing Through the Clouds: Cloud Gap Imputation with Prithvi Foundation Model, *2nd ICLR Workshop on Machine Learning for Remote Sensing*, Vienna, Austria, 2024.
2. Lacoste A., Lehmann N., Rodriguez P., Sherwin E. D., Kerner H., Lütjens B., Irvin J.A., Dao D., **Alemohammad H.,** Drouin A., Gunturkun M., Huang G., Vazquez D., Newman D., Bengio Y., Ermon S., Zhu X.X., GEO-Bench: Toward Foundation Models for Earth Monitoring, *NeurIPS 2023 Datasets and Benchmarks,* New Orleans, LA, USA, 2023.
3. Fluhrer A., Jagdhuher T., Montzka C., Schumacher M, **Alemohammad H.,** Tabatabaeenejad A., Kunstmann H., Entekhabi D., Estimating Soil Moisture Profiles by Combining P-Band SAR with Hydrological Modeling, *2023 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2023)*, 2846-2849, Pasadena, CA, USA, 2023.
4. Lacoste A., Lehmann N., Sherwin E. D., Kerner H., **Alemohammad H.,** Lütjens B., Irvin J., Dao D., Rodriguez P., Drouin A., Vazquez D., Toward Foundation Models for Earth Monitoring. *Montreal AI Symposium (MAIS)*, 2022.
5. Lacoste A., Sherwin E. D., Kerner H., **Alemohammad H.,** Lütjens B., Irvin J., Dao D., Chang A., Gunturkun M., Drouin A., Rodriguez P., Vazquez D., Toward Foundation Models for Earth Monitoring: Proposal for a Climate Change Benchmark. *NeurIPS 2021 Workshop Tackling Climate Change with Machine Learning,* 2021.
6. **Alemohammad H.**, The Case for Open-Access ML-Ready Geospatial Training Data, *2021 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2021)*, 1146-1148, Brussels, Belgium, Jul. 2021.
7. Guzder-Williams B., **Alemohammad H.,** Surface Water Detection from Sentinel-1, *2021 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2021)*, 286-289, Brussels, Belgium, Jul. 2021.
8. Fluhrer A., Jagdhuher T., Tabatabaeenejad A., **Alemohammad H.,** Montzka C., Schumacher M., Kunstmann H., Complex Permittivity and Penetration Depth Estimation from Airborne P-Band SAR Data Applying a Hybrid Decomposition Method, *2021 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2021)*, 5884-5887, Brussels, Belgium, Jul. 2021.
9. **Alemohammad H.**, Booth K., LandCoverNet: A global benchmark land cover classification training dataset, *NeurIPS 2020 Workshop AI for Earth Sciences*, Vancouver, Canada, Dec. 2020.
10. Mohandoss T., Kulkarni A., Northrup D., Mwebaze E., **Alemohammad H.**, Generating Synthetic Multispectral Satellite Imagery from Sentinel-2, *NeurIPS 2020 Workshop AI for Earth Sciences*, Vancouver, Canada, Dec. 2020.
11. Kulkarni A., Mohandoss T., Northrup D., Mwebaze E., **Alemohammad H.**, Semantic Segmentation of Medium-Resolution Satellite Imagery using Conditional Generative Adversarial Networks, *NeurIPS 2020 Workshop AI for Earth Sciences*, Vancouver, Canada, Dec. 2020.
12. Nachmany Y., **Alemohammad H.**, Detecting Roads from Satellite Imagery in the Developing World, *in Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition Workshop,* 83-89, Long Beach, CA, USA, Jun. 2019.
13. Nachmany Y., **Alemohammad H.**, Generating a Training Dataset for Land Cover Classification to Advance Global Development, in *NeurIPS Workshop on Machine Learning for the Developing World,* Montreal, Canada, Dec. 2018.
14. **Alemohammad S.H.,** Kolassa J., Prigent C., Aires F., Gentine P., Statistical Downscaling of Remotely-Sensed Soil Moisture, *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2017)*, Fort Worth, TX, USA, Jul. 2017.
15. **Alemohammad S.H.,** Kolassa J., Prigent C., Aires F., Gentine P., Statistical Retrieval of Surface and Root Zone Soil Moisture using Synergy of Multi-Frequency Remotely-Sensed Observations, *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2017)*, Fort Worth, TX, USA, Jul. 2017.

16. **Alemohammad S.H.,** Jagdhuber T., Moghaddam M., Entekhabi D., Decomposing Soil and Vegetation Contributions in Polarimetric L- and P- Band SAR Observations, *2016 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2016)*, Beijing, China, Jul. 2016.
17. **Alemohammad S.H.,** Konings A.G., Jagdhuber T., Entekhabi D., Characterizing Vegetation and Soil Parameters across Different Biomes Using Polarimetric P-Band SAR Measurement, *2016 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2016)*, Beijing, China, Jul. 2016.
18. Jagdhuber T., Entekhabi D., Hajnsek I., Konings A.G., McColl K.A., **Alemohammad S.H.,** Das N.N., Montzka C., Piles M., Physically-based Retrieval of SMAP Active-Passive Measurements Covariation and Vegetation Structure Parameters, *2016 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2016)*, Beijing, China, Jul. 2016.
19. Santi E., Paloscia S., Pettinato S., Entekhabi D., **Alemohammad S.H.,** Konings A.G., Integration of Passive and Active Microwave Data from SMAP, AMSR2 and Sentinel-1 for Soil Moisture Monitoring, *2016 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2016)*, Beijing, China, Jul. 2016.
20. Obringer R., Zhang X., Mallick K., **Alemohammad S.H.,** Niyogi D., Assessing Urban Droughts in a Smart City Framework, *2016 Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.*, XLI-B2, 747-751 (ISPRS 2016), Prague, Czech Republic, Jul. 2016.
21. Jagdhuber T., Entekhabi D., Hajnsek I., Konings A.G., McColl K.A., **Alemohammad S.H.**, Das N.N., Montzka C., Physically-based Active-Passive Modelling and Retrieval for SMAP Soil Moisture Inversion Algorithm, *2015 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2015)*, Milan, Italy, Jul. 2015

OTHER PUBLICATIONS

1. Maskey M., **Alemohammad H.,** MurphyK. J., Ramachandran R., Advancing AI for Earth science: A data systems perspective, Eos, 101, Nov. 2020.
2. **Alemohammad H.,** Maskey M., Estes L., Gentine P., Lunga D., Yi Z-F., Advancing Application of Machine Learning Tools for NASA's Earth Observation Data, Workshop Report, Jan. 2020.
3. Lunga D.D., **Alemohammad H.,** Liu Y., Newsam S., Pacifici F., Santos-Villalobos H., Shook E., Stewart R.N., Voisin S., Yang L., Bhaduri, B.L., The Trillion Pixel GeoAI Challenge Workshop Report, Dec 2019. doi:10.2172/1606744.

INVITED TALKS

1. CV4EO Workshop at IEEE WACV, 2024
2. Trillion Pixel Challenge Workshop, ORNL, 2023
3. World Bank, 2023
4. Clark University Graduate School of Geography Centennial, 2023
5. GeoBuiz Summit, 2023
6. SatSummit, 2022
7. Ethiopia's Digital Agricultural Extension and Advisory Services Roadmap Convening, 2022
8. AGU Fall Meeting, 2021
9. NASA GES DISC, 2021
10. NASA SMD AI/ML Tag Up, 2021
11. ESA Phi Week, 2021
12. UN World Data Forum, 2021
13. Deep Learning IndabaX, Sudan, 2021
14. Deep Learning IndabaX, Tanzania, 2021
15. World Resources Institute, 2021
16. eScience Institute, University of Washington, 2021
17. Centre for Satellite Data in Environmental Science, University of Leeds, 2021
18. Department of Earth System Science, Stanford University, 2021.
19. The TWIML AI Podcast, 2020.
20. Borlaug Dialogue, 2020.
21. All in the Field: AWS Agriculture, 2020.
22. ESA Phi Week, 2020.
23. Google Brain, Accra, 2020.
24. GIZ Remote Sensing Forum, 2020.
25. CGIAR Big Data in Agriculture Convention, 2020.
26. The Scene From Above Podcast, 2020.
27. Chatham House, 2019.
28. ESIP Summer Meeting, 2019.
29. ICT4Ag, 2019.

30. AI for Good Summit, 2019
31. AGU Fall Meeting, 2018
32. AWS's Earth Analytics in the Cloud Day, University of Colorado, Boulder, October 2017
33. Department of Civil and Environmental Engineering, University of Wisconsin- Milwaukee, September 2017
34. Earth Science Division, NASA Ames Research Center, February 2017.
35. Columbia Water Center, Columbia University, September 2016.
36. Department of Agronomy, Purdue University, March 2015.
37. Department of Civil and Environmental Engineering, Princeton University, September 2014.
38. Hydrosystems Laboratory, University of Illinois at Urbana-Champaign, June 2014.
39. Earth System Science Interdisciplinary Center (ESSIC), University of Maryland, College Park, May 2014.
40. Department of Civil and Environmental Engineering, Massachusetts Institute of Technology, March 2014.
41. Department of Civil and Environmental Engineering, University of Connecticut, April 2012.
42. Center for Hydrometeorology and Remote Sensing, University of California, Irvine, March 2010.

TEACHING EXPERIENCE

CLARK UNIVERSITY

- Instructor: Advanced Geospatial Analytics w Python **2023**

MIT **2011 - 2014**

- Co-Lecturer: Introduction to Hydrologic Modeling
- Guest Lecturer: Introduction to Hydrology
- Teaching Assistant: Introduction to Hydrology, Environmental Fluid Transport Processes Laboratory, Discover Earth, Atmospheric and Planetary Sciences
- Teaching Certificate: Teaching and Learning Laboratory at MIT

Sharif University of Technology **2005 - 2008**

- Teaching Assistant: Water Resources Systems Analysis, Engineering Hydrology, Hydraulics of Open Channels

Sharif University of Technology, International Campus **2007 - 2008**

- Teaching Assistant: Engineering Hydrology, Hydraulics of Open Channels, Water and Wastewater Engineering

SELECTED CONFERENCE PRESENTATIONS

1. **Alemohammad, H.,** Applications of Foundation Models in Earth Sciences Applied to Remote Sensing Imagery, 2nd U.S.-Africa Frontiers of Science, Engineering, and Medicine Symposium, Rabat, Morocco, Jan. 2024.
2. **Alemohammad, H.,** Transforming Earth Observation Analytics: Advancements and Applications of Foundation Models in Remote Sensing, CV4EO Workshop at IEEE WACV (invited), Waikoloa Beach, HI, USA, Jan. 2024.
3. **Alemohammad, H.,** Exploring Effectiveness of Foundation Models for Downstream Applications on Satellite Data, 2023 AGU Annual Meeting, San Francisco, CA, USA, Dec. 2023.
4. **Alemohammad, H.,** AI and open remote sensing data for crop yields prediction, International workshop on Earth Observation for Food Security, World Bank (invited), Washington, DC, USA, May 2023.
5. **Alemohammad, H.,** Incorporating Training Data Uncertainty in Machine Learning Models for Satellite Imagery, European Geophysical Union, Vienna, Austria, Apr. 2023.
6. **Alemohammad, H.,** Amplifying Impact through Collaborative Ecosystems for Geospatial Analytics, GeoBuiz Summit, Monterey, CA, USA, Mar. 2023.
7. **Alemohammad, H.,** An Ecosystem of Open Benchmark Data and Models to Advance Agricultural Monitoring from Earth Observations, 1st U.S.-Africa Frontiers of Science, Engineering, and Medicine Symposium, Nairobi, Kenya, Oct. 2022.
8. **Alemohammad, H.,** State of AI and EO, 2022 SatSummit (invited), Washington, DC, USA, Sep. 2022.
9. **Alemohammad, H.,** Radiant MLHub: Advancing Machine Learning Applications in Earth Sciences with Benchmark Training Data and Models, ESA Living Planet Symposium, Bonn, Germany, May 2022.
10. **Alemohammad, H.,** Collaborative Workflows and Communities to Advance Geospatial Machine Learning Applications, 2nd Geospatial Knowledge Infrastructure Summit, Feb. 2022.
11. **Alemohammad, H.,** Open-Source Standards and Communities to Advance Geospatial Machine Learning Applications, ESIP Winter Meeting, Jan. 2022.
12. **Alemohammad, H.,** Open Machine Learning-Ready Data and Standards to Support Decision Making based on Earth Observations (invited), 2021 AGU Annual Meeting, New Orleans, LA, USA, Dec. 2021.

13. **Alemohammad, H.,** Radiant MLHub: From Ground Referencing to ML-Ready Training Data, GEOGLAM In Situ Side Meeting, GEO Week, Nov. 2021.
14. **Alemohammad, H.,** Developing Reusable and Discoverable Machine Learning Workflows in Earth Sciences (invited), NASA GES DISC, Nov. 2021.
15. **Alemohammad, H.,** Radiant MLHub: From Ground Referencing to ML-Ready Training Data (invited), 50×2030 at the World Data Forum, Oct. 2021.
16. **Alemohammad, H.,** Machine Learning on Earth Observations: Introduction and Applications (invited), Sudan IndabaX 2021, Sep. 2021.
17. **Alemohammad, H.,** Machine Learning on Earth Observations to Address Global Development Challenges (invited), Tanzania IndabaX 2021, Jun. 2021.
18. **Alemohammad, H.,** Radiant MLHub: An Open-Access Repository of ML-Ready EO Data (invited), ESA Phi-Week, Oct. 2021.
19. **Alemohammad S.H.,** Radiant MLHub: Advancing Utilization of AI Applications on Earth Observations with Benchmark Training Datasets, 2nd NOAA AI Workshop, College Park, MD, USA, Feb. 2021.
20. **Alemohammad S.H.,** LandCoverNet: Generating a Human-Verified Global Land Cover Classification Training Dataset, 2020 AGU Annual Meeting, San Francisco, CA, USA, Dec. 2020.
21. **Alemohammad S.H.,** Radiant MLHub: A Repository for Machine Learning Ready Geospatial Training Data, 2019 AGU Annual Meeting, San Francisco, CA, USA, Dec. 2019.
22. **Alemohammad S.H.,** Earth Observations and AI for Agricultural Monitoring, Harnessing Big Data and AI for Sustainable and Inclusive Agriculture, Chatham House, London, UK, July 2019.
23. **Alemohammad S.H.,** Radiant ML Hub, A Cloud Based Commons for Geospatial Training Datasets, ESIP Summer Meeting, Tacoma, WA, USA, July 2019.
24. **Alemohammad S.H.,** Machine Learning Commons for Agricultural Monitoring, ICT for Agriculture, Washington, DC, USA, June 2019.
25. **Alemohammad S.H.,** Earth Observations and AI for Global Impact, AI for Good Summit (invited), Geneva, Switzerland, May 2019.
26. **Alemohammad S.H.,** Earth Observations and Cloud Technology for Improved Agricultural Decision Making (invited), 2018 AGU Annual Meeting, Washington, DC, USA, Dec. 2018.
27. **Alemohammad S.H.,** Open Source Geospatial Platform to Tackle Environmental and Development Challenges, 2018 AGU Annual Meeting, Washington, DC, USA, Dec. 2018.
28. **Alemohammad S.H.,** Radiant Earth Foundation Platform, SatSummit, Washington, DC, USA, Sep. 2018.
29. **Alemohammad S.H.,** Radiant.Earth overview and platform demonstration, Annual World Bank Conference on Land and Poverty, Washington, DC, USA, Mar. 2018.
30. **Alemohammad S.H.,** Kolassa J., Prigent C., Aires F., Gentine P., Downscaling Remotely-Sensed Soil Moisture Estimates using Machine Learning Techniques, 16th Conference on Artificial Intelligence and its Applications to the Environmental Sciences, Baltimore, MD, USA, Jul. 2017.
31. **Alemohammad S.H.,** Kolassa J., Prigent C., Aires F., Gentine P., Neural Network-Based Retrieval of Surface and Root Zone Soil Moisture using Multi-Frequency Remotely-Sensed Observations, 2017 EGU General Assembly, Vienna, Austria, Apr. 2017.
32. **Alemohammad S.H.,** Gentine P., Kolassa J., Prigent C., Aires F., Neural Network Based Retrieval of Root Zone Soil Moisture using Synergy of L- and X-Band Remotely Sensed Observations, 2016 AGU Annual Meeting, San Francisco, CA, USA, Dec. 2016.
33. **Alemohammad S.H.**, Gentine P., Kolassa J., Prigent C., Aires F., Statistical Retrieval of Root Zone Soil Moisture using Synergy of Multiple-Frequency Remote Sensing Observations, 3rd International Soil Moisture Validation and Application Workshop, New York, NY, Sep. 2016.
34. **Alemohammad S.H.,** McColl K.A., Konings A.G., Entekhabi D., Spatio-Temporal Error Characterization of Geophysical Variables Using Collocation Methods, Joint Statistical Meetings 2016, Chicago, IL, USA, Aug. 2016
35. **Alemohammad S.H.,** Jagdhuber T., Moghaddam M., Entekhabi D., Decomposing Soil and Vegetation Contributions in Polarimetric L- and P- Band SAR Observations, International Geoscience and Remote Sensing Symposium 2016 (IGARSS 2016), Beijing, China, Jul. 2016.
36. **Alemohammad S.H.,** Konings A.G., Jagdhuber T., Entekhabi D., Characterizing Vegetation and Soil Parameters across Different Biomes Using Polarimetric P-Band SAR Measurement, International Geoscience and Remote Sensing Symposium 2016 (IGARSS 2016), Beijing, China, Jul. 2016.

37. **Alemohammad S.H.,** Konings A.G., Jagdhuber T., Entekhabi D., Retrieving Vegetation Parameters and Soil Reflection Coefficients with P-band SAR Polarimetry, 2015 AGU Annual Meeting, San Francisco, CA, USA, Dec. 2015.
38. **Alemohammad S.H.,** Konings A.G., Jagdhuber T., Entekhabi D., Retrieving Vegetation and Soil Parameters from Active Polarimetric P-band Observations, International Geoscience and Remote Sensing Symposium 2015 (IGARSS 2015), Milan, Italy, Jul. 2015.
39. **Alemohammad S.H.,** McColl K.A., Konings A.G., Entekhabi D., Stoffelen A., Characterizing Precipitation Product Errors across the United States using Triple Collocation, 20th Conference on Satellite Meteorology and Oceanography, 95th AMS Annual Meeting, Phoenix, AZ, USA, Jan. 2015.
40. **Alemohammad S.H.,** McLaughlin D., Entekhabi D., Characterizing Precipitation Forcing Uncertainty in Land Data Assimilation Using an Ensemble-Based Bayesian Approach, 2014 AGU Annual Meeting, San Francisco, CA, USA, Dec. 2014.
41. **Alemohammad S.H.,** McLaughlin D., Entekhabi D., Quantifying Uncertain Remotely-Sensed Rainfall Estimates using an Ensemble-Based Bayesian Approach, Joint Statistical Meetings 2014, Boston, MA, USA, Aug. 2014.
42. **Alemohammad S.H.,** Entekhabi D., McLaughlin D., Evaluation of Long-Term SSM/I-based Precipitation Records, 2012 AGU Annual Meeting, San Francisco, CA, USA, Dec. 2012.
43. Wojcik R., McLaughlin D., **Alemohammad S.H.,** Entekhabi D., Ensemble-Based Fusion of Noisy Images, International Conference on Ensemble Methods in Geophysical Sciences, Toulouse, France, Nov. 2012.
44. **Alemohammad S.H.,** Entekhabi D., McLaughlin D., A Parametric Rainfall Replicate Generation Method, 2011 AGU Annual Meeting, San Francisco, CA, USA, Dec. 2011.
45. **Alemohammad S.H.,** Entekhabi D., Merging Satellite Measurements of Rainfall Using Multi-scale Imagery Technique, WCRP Open Science Conference, Denver, CO, USA, Oct. 2011.
46. **Alemohammad S.H.,** Wojcik R., McLaughlin D., Entekhabi D., Likelihood Estimation for Bayesian Assimilation of Remotely Sensed Rainfall Data, 10th International Precipitation Conference, Coimbra, Portugal, Jun. 2010

CLARK UNIVERSITY SERVICE

- Member of MSGIS Steering Committee, Spring 2023 - present
- Member of the Executive Working Group, School of Climate, Environment and Society, Fall 2023
- Member of the Administrative Committee, School of Climate, Environment and Society, Fall 2023
- GSG Reappointment Committee for Abby Frazier, Fall 2023
- Member of the Implementation Committee, School of Climate, Environment and Society, Spring 2023

EDITORIAL SERVICES

- Reviewer for *Nature Communications, NeurIPS 2023, 2023 CVPR EarthVision workshop , 2021 CVPR EarthVision workshop, IEEE Trans. on Geoscience and Remote Sensing, Geophysical Research Letters, Water Resources Research, Remote Sensing Letters, Monthly Weather Review, Journal of Hydrometeorology, Journal of Climate, Advances in Water Resources, Frontiers In Sustainable Food Systems, Journal of Hydrology, Journal of Applied Meteorology and Climatology, Remote Sensing, Sensors, Advances in Meteorology, Advances in Space Research, Water and Environment Journal, and Iran Water Resources Research;*
- Reviewer for NASA ROSES Solicitations 2016, 2017, 2018, 2020, 2021, 2023, 2024 (8 panels total across *NESSF, AIST, CSDA, ECIP, HPOSS*)
- Reviewer, Climate Change AI Innovation Grants Program, 2023
- Associate Editor, AI in Food, Agriculture and Water, 2019 - 2021.
- Area Chair, 2021 British Machine Vision Conference
- Meta-reviewer, Climate Change AI Innovation Grants Program, 2021
- Reviewer, *AGU Annual Meeting Student Travel Grant, 2013*;
- Reviewer, *AGU David E. Lumley Young Scientist Scholarship for Energy and Environmental Science, 2013*;
- Associate Editor, Journal of Hydrology, 2017.
- Member of Editorial Advisory Board and Reviewer of the Book, *Handbook of Research on Hydroinformatics: Technologies, Theories and Applications*, Tagelsir Mohamed Gasmelseid (Editor), IGI Global, Hershey, PA, 2011;
- Member of Editorial Board of the website *Learn Data Analysis (LDA)*;
- Member of Editorial Board of *Sharif Civil Magazine* (ISSN 1023-7437), Volumes 35 & 36;

PROFESSIONAL MEMBERSHIPS

AGU, IEEE, AAG, EGU, AMS, ASA