Saeid Aminjafari

Ph.D. in Physical Geography

Affiliations:

- Department of Space, Earth and Environment, Chalmers University of Technology
- Department of Physical Geography, Stockholm University
- Bolin Centre for Climate Research, Stockholm University

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Languages: English (C1), Persian (native), Swedish (B2), Arabic (B1)

Education & Research

● Principal Investigator (PI) of Research Project (Starting Jan 2026, appointment confirmed)
Department of Physical Geography, Stockholm University, Sweden.
Project: Integrating Earth Observations for Enhancing Sweden's National Water Security Under Climate Change
- PI of a project funded by the Swedish National Space Agency (Rymdstyrelsen) to establish a national-scale, satellite-based monitoring system for Sweden's surface water dynamics.
- The project uses high-resolution data from recent Earth Observation (EO) missions including Surface Water and Ocean Topography (SWOT), Ice, Cloud, and land Elevation Satellite-2 (ICESat-2), and NASA-ISRO Synthetic Aperture Radar (NISAR), to quantify river flow, water extent, elevation, and storage.
Skills: *Hydrology · Remote Sensing · Earth Science · Geographic Information Systems (GIS) · Hydrogeodesy · InSAR · Altimetry · SAR . Python & MATLAB programming*

● Postdoctoral Associate in Geoscience and Remote Sensing (2024 - now)
Department of Space, Earth and Environment, Chalmers Technical University, Gothenburg, Sweden.
Project: Monitoring vertical ground motion
- I am responsible for a project funded by the Swedish Transport Administration (Trafikverket) to estimate ground motion around and on railroads in Sweden. We use satellite data and space geodesy to estimate these motions as well as hydroclimatic and hydrogeological data to understand the main factors leading to those motions, e.g., frost and thaw, precipitation, soil characteristics, and landslides.
Skills: *Hydrology · Remote Sensing · Earth Science · Geographic Information Systems (GIS) · Hydrogeodesy · InSAR · Altimetry · SAR . Python & MATLAB programming*

● Ph.D. in Hydrology and Remote Sensing (2019 - 2023)
Department of Physical Geography, Stockholm University, Sweden.
Thesis title: Monitoring Water Availability in Northern Inland Waters from Space, available on DiVA
- I used Landsat images and maximum likelihood classification to quantify water occurrence and its changes in the Selenga River Delta. I used hydroclimatic data such as runoff, temperature, suspended sediment concentration, and lake water level to understand the drivers of the change in surface water occurrence.
- I developed the InSAR methodology to quantify water levels in Swedish lakes.

- I studied changes in a large set of lakes in Sweden and answered the questions regarding those changes and their drivers. I assessed the impact of human regulation (such as damming for hydropower, mining, irrigation, and transportation canals) on changes in lake water levels.
- I also taught hydrology courses (such as advanced hydrology and Water and Land Risk Assessment) and mentored Ph.D. and master's students.
Skills: *Hydrology · Remote Sensing · Earth Science · Geographic Information Systems (GIS) · Hydrogeodesy · InSAR · Altimetry · SAR . Python & MATLAB programming . Machine Learning*

● **M.Sc. in Marine Geodesy** **(2011 - 2014)**
School of Surveying and Geospatial Engineering, University of Tehran, Iran.
- Tidal modelling
- Bathymetry & geostrophic currents
- Advanced Global Positioning System
- Monitoring embankment dam deformation with InSAR
Skills: *Remote Sensing · Hydrography . Bathymetry . Geographic Information Systems (GIS) · InSAR · MATLAB & Python Programming Languages*

● **B.Sc. in Geomatics** **(2006 - 2010)**
Tafresh University, Tafresh, Iran

Teaching & Supervision

● **Advanced Hydrology 7.5 credits (Stockholm University)** **(2020 - 2022)**
Teacher assistant in Hydro-Geodesy. In this module, I taught students how to generate interferograms and interpret the fringe patterns relating to hydrologic connectivity and water level changes. I used ISCE software in this course.

● **Water Management and Pollution, 15 credits (Stockholm University)** **(2021 - 2021)**
Teacher assistant in optimization. In this module, students learned how to model the most efficient way to mitigate pollutants' flow in a basin. I used the Pyomo model in this course.

● **Co-supervision of 2 Master's students in remote sensing of hydrology (Stockholm University) (2021 - 2022)**

● **Tellus I – Physical Geography, 15 credits (Stockholm University)** **(2019 - 2021)**
The course deals with hydrology, mass movements, rivers and flooding, oceans, coastlines, groundwater, the atmosphere and climate, arid regions, geomorphology, Quaternary geology, and global changes.

Training & Conferences

● **Pedagogical training:** "Professional development course 1, Teaching and Learning in Higher Education" 7.5 credits (Centre for the Advancement of University Teaching (CeUL), Stockholm University) **(2021)**

● **Machine Learning:** Geo-computation and machine learning for environmental applications, 7.5 credits (Bolin Centre, Stockholm University) **(2021)**

● **Conferences:** Active participation in international conferences such as the ESA Living Planet Symposium (2013, 2022, 2025), EGU (2020-2022), AGU (2021-2022), Swedish Climate Symposium (2022), Baltic Sea Science Congress (2019 & 2021 & 2023), and Svenska Rymdforskares Samarbetsgrupp (SRS) 2025. **(2013-2025)**

Professional Experience

● Geophysical marine surveyor, data processor, and cartographer
SEA WORK SURVEY (SWS) EST, Tehran, Iran. (2018 - 2019)
Geophysical surveying . Multibeam echosounder data processing . Seafloor mapping and cartography . Navigating drilling rigs . Debris removal . Writing Daily Progress Reports (DPRs) . Writing industry proposals

● Researcher and instructor
Hydrography and Tidal Affairs, National Cartographic Centre of Iran (NCC). (2015 - 2017)
Skills: *Satellite Altimetry · Tidal modelling · Oceanography . Geostrophic Currents . Bathymetry*

Publications https://saeid-aminjafari.github.io/publications

1. Jaramillo, F., **Aminjafari, S.**, Castellazzi, P., et al., **2024**. The Potential of Hydrogeodesy to Address Water-Related and Sustainability Challenges. Water Resources Research, 60(11), e2023WR037020. https://doi.org/10.1029/2023WR037020
2. **Aminjafari, S.**, Frappart, F., Papa, F., Brown, I., and Jaramillo, F., **2024**. Enhancing the Temporal Resolution of Water Levels from Altimetry Using D-InSAR: A Case Study of 10 Swedish Lakes. Science of Remote Sensing, 10, 100162. https://doi.org/10.1016/j.srs.2024.100162
3. **Aminjafari, S.**, Brown, I., and Jaramillo, F., **2024**. Evaluating D-InSAR Performance to Detect Small Water Level Fluctuations in Two Small Lakes in Sweden. Environmental Research Communications, 6, 091006. https://doi.org/10.1088/2515-7620/ad7701
4. **Aminjafari, S.**, Brown, I., Frappart, F., Papa, F., Blarel F., Vahidi Mayamey, F., and Jaramillo, F., **2024**. Distinctive Patterns of Water Level Change in Swedish Lakes Driven by Climate and Human Regulation. Water Resources Research, 60(3), e2023WR036160. https://doi.org/10.1029/2023WR036160
5. **Aminjafari, S.**, Brown, I., Vahidi Mayamey, F., and Jaramillo, F., **2024**. Tracking Centimeter-Scale Water Level Changes in Swedish Lakes Using D-InSAR. Water Resources Research, 60(2), e2022WR034290. https://doi.org/10.1029/2022WR034290
6. **Aminjafari, S.**, Brown, I., Chalov, S., Simard, M., Lane, C.R., Jarsjö, J., Darvishi, M. and Jaramillo, F., **2021**. Drivers and extent of surface water occurrence in the Selenga River Delta, Russia. Journal of Hydrology: Regional Studies, 38, p.100945. https://doi.org/10.1016/j.ejrh.2021.100945
7. Darvishi, M., Destouni, G., **Aminjafari, S.** and Jaramillo, F., **2021**. Multi-Sensor InSAR Assessment of Ground Deformations around Lake Mead and Its Relation to Water Level Changes. Remote Sensing, 13(3), p.406. https://doi.org/10.3390/rs13030406
8. Liu, D., Wang, X., **Aminjafari, S.**, Yang, W., Cui, B., Yan, S., Zhang, Y., Zhu, J. and Jaramillo, F., **2020**. Using InSAR to identify hydrological connectivity and barriers in a highly fragmented wetland. Hydrological Processes, 34(23), pp.4417-4430. https://doi.org/10.1002/hyp.13899
9. Soltanpour, A., Pirooznia, M., **Aminjafari, S.** and Zareian, P., **2018**. Persian Gulf and Oman sea tide modeling using satellite altimetry and tide gauge data (TM-IR01). Marine Georesources & Geotechnology, 36(6), pp.677-687. https://doi.org/10.1080/1064119X.2017.1366608
10. **Aminjafari, S.**, **2017**. Monitoring of Masjed-Soleiman embankment dam's deformation using a combination of Interferometric Synthetic Aperture Radar (InSAR) and finite element modeling. Geodesy and Cartography, 43(1), pp.14-21. https://doi.org/10.3846/20296991.2017.1299842

Board member

I was a member of the PhD council in 2020 at Stockholm University. My responsibilities were informing students about the latest decisions made by the department board and informing the department board about the needs of the students. In addition, I organized social events and served as the treasurer for handling expenses and receiving funding.

Reviewer for Journals

AGU - Water Resources Research (4), Geophysical Research Letters (1), Earth and Space Science (1)
Elsevier - Advances in Water Resources (1), Journal of Hydrology: Regional Studies (1), Science of the Total Environment (1)
IEEE - Geoscience and Remote Sensing Letters (1)
Springer - Geoscience Letters

Grants

Swedish National Space Agency (Rymdstyrelsen): 3-year Career Grant (PI), approx. 430,000 € (2026–2028)
Travel grant: Donation scholarship, 600 € - Bolin Centre Seed-money Research Grant, 5000 € - Alice Wallenbergs Stipendship 600 € - Bolin Centre conference participation grant, 1000 €