

Yousef Khajavigodellou

GEOGRAPHY · ENVIRONMENTAL SCIENCE & POLICY · MICHIGAN STATE UNIVERSITY

East Lansing, Michigan, USA | (818) 519-8124 | khajavig@msu.edu

EDUCATION

- 2021 – present **Ph.D. Candidate, Geography** — dual major, Environmental Science & Policy (ESPP)
Michigan State University, East Lansing, Michigan, USA
- 2011 **M.Sc., Geographic Information Systems & Remote Sensing**
Islamic Azad University, Science and Research Branch, Tehran, Iran
- 2002 **B.Sc., Watershed Management Engineering**
University of Kurdistan, Sanandaj, Iran

RESEARCH INTERESTS

Water–Energy–Food (WEF) nexus | Transboundary river basin governance | Water policy & diplomacy | GIS and remote sensing | Geospatial AI for water resource management

PEER-REVIEWED PUBLICATIONS

1. **Khajavigodellou, Y.**, Moran, E. F., Qi, J., & Chen, J. (2026). Nexus-diplomacy integration in transboundary river water governance: A systematic review. *Water*, 18(9), 1034. <https://doi.org/10.3390/w18091034>
2. **Khajavigodellou, Y.**, Qi, J., Soltani, M., Zarrin, Z., Karimi, H., & Bakhshianlamouki, E. (2026). Optimization of agricultural systems under water–energy–food nexus: A framework for the Urmia Lake Basin. *Sustainability*, 18(2), 843. <https://doi.org/10.3390/su18020843>
3. **Khajavigodellou, Y.**, & Qi, J. (2026). Upstream land-use change and transboundary river water redistribution: A global mapping. *Frontiers*. (Accepted, in press)
4. Zarrin, Z., **Khajavigodellou, Y.**, & Valadan Zoej, M. J. (2024). Detection of land use changes in forests using satellite image classification based on deep learning: A case study of Sardasht forests. *Journal of Geography, Environment and Earth Science International*, 28(5), 43–51. <https://doi.org/10.9734/jgeesi/2024/v28i5769>
5. **Khajavigodellou, Y.**, Alesheikh, A. A., Mohammed, A. A. S., & Chapi, K. (2014). Excellent approach to modeling urban expansion by fuzzy cellular automata – agent base model. In M. Strojnik Scholl & G. Páez (Eds.), *Infrared Remote Sensing and Instrumentation XXII, Proceedings of SPIE*, 9219, 921909. SPIE Optical Engineering + Applications, San Diego, California, USA. <https://doi.org/10.1117/12.2063097>

MANUSCRIPTS UNDER REVIEW

- **Khajavigodellou, Y.**, et al. Bridging nexus and diplomacy in transboundary rivers governance: Definition, challenges, and opportunities. *Environmental Research Letters*. (Under review)
- **Khajavigodellou, Y.**, et al. Metacoupling assessment of water–energy–food nexus in transboundary rivers: A global mapping. *Geography and Sustainability*. (Under review)

RESEARCH IN PROGRESS

- River flows as justice claims: Mapping flows and governance deficits in transboundary rivers.
- AI data centres as unrecognized riparian actors on shared rivers.

CONFERENCE PAPERS & PRESENTATIONS

1. **Khajavigodellou, Y.,** Moran, E. F., Qi, J., & Chen, J. (2025). Bridging nexus and diplomacy in transboundary river governance: A review. *AGU Annual Meeting (AGU25)*, New Orleans, Louisiana, USA, December.
2. **Khajavigodellou, Y.,** & Qi, J. (2025). DIPLOMAT-WEF: Diplomatic intelligence platform for observations, management, and assessment of transboundary water–energy–food nexus. *AGU Annual Meeting (AGU25)*, New Orleans, Louisiana, USA, December.
3. **Khajavigodellou, Y.,** Qi, J., Moore, N. J., & Zarrinnarges, Y. (2025). Navigating waters of conflict: Integrative water diplomacy and the water–food–land nexus in the Tigris–Euphrates River Basin. *AAG Annual Meeting*, Detroit, Michigan, USA, March 24–28.
4. **Khajavigodellou, Y.,** Johnson, J., Moumouh, J., Mellios, N., Ningi, T., & Scott, C. (2024). Advances in integrated crop–livestock–biogas systems for enhancing water quality and sustainability in the Chesapeake Bay watersheds: A case study of Dickinson College Farm. *AGU Annual Meeting (AGU24)*.
5. **Khajavigodellou, Y.,** Qi, J., Chen, J., Nejadhashemi, A. P., Moore, N. J., & Zarrin, Z. (2023). Reframing the WEF nexus to prevent WEF bankruptcy: Transboundary river basin water–energy–food bankruptcy challenges and potential solutions. *AGU Annual Meeting (AGU23)*.
6. **Khajavigodellou, Y.,** Qi, J., Chen, J., Moore, N. J., Nejadhashemi, A. P., & Zarrin, Z. (2023). Transboundary water resource conflicts: A new cold war? *AGU Annual Meeting (AGU23)*.
7. Shope, M., **Khajavigodellou, Y.,** Lan, X., & Chen, J. (2023). Bridging gaps and balancing generalizability with specificity: Coupled human and natural systems frameworks for real-world applications in a changing world. *AGU Annual Meeting (AGU23)*.
8. Chen, J., John, R., Tian, L., Fang, W., Kolluru, V., Saraf, S., ... Groisman, P. (2023). Socioeconomic–environmental systems along the Silk Road across Asian drylands belt. *AGU Annual Meeting (AGU23)*.
9. Winkler, J. A., **Khajavigodellou, Y.,** Penrod, N., Shen, M., & Stimpfel, C. (2023). Synoptic climatology since 1991. *AAG Annual Meeting*, Denver, Colorado, USA, March. (*Invited — Panel on Advances in Climatology*)
10. **Khajavigodellou, Y.,** Qi, J., Soltani, M., & Zarrin, Z. (2023). An optimal water–food–energy management pattern at a watershed scale: A perspective for the Urmia Lake Basin. *AAG Annual Meeting*, Denver, Colorado, USA, March 23–27.
11. **Khajavigodellou, Y.,** Alesheikh, A. A., Hakimpour, F., & Chapi, K. (2015). Optimizing urban modeling based on the road network and land use/cover changes using an agent-based–cellular automata model. *Geocomputation 2015*, University of Texas at Dallas, USA, May 21–23.
12. **Khajavigodellou, Y.,** Alesheikh, A. A., Chapi, K., & Hakimpour, F. (2014). Simulating urban expansion through cellular automata model on different neighborhood sizes. *Spatial Accuracy 2014*, Michigan State University, East Lansing, Michigan, USA.
13. **Khajavigodellou, Y.,** Fardad, M., Alesheikh, A. A., & Hakimpour, F. (2012). Using artificial neural network–cellular automata in landslide hazard mapping. *NCC Conference*, Tehran, Iran.

14. **Khajavigodellou, Y., Alesheikh, A. A., & Fardad, M.** (2012). Using fuzzy cellular automata method in image processing and modeling urban development. *First National Conference on Artificial Intelligence in Electrical and Computer Engineering (NCAI 2012)*, Azad University of Behbahan, Iran, April 15.
15. Fardad, M., Alesheikh, A. A., **Khajavigodellou, Y., & Hakimpoor, F.** (2012). Using artificial intelligence and GIS in landslide hazard mapping. *NCAI 2012*, Azad University of Behbahan, Iran, April 15.
16. **Khajavigodellou, Y., Alesheikh, A. A., & Fardad, M.** (2011). Using fuzzy cellular automata in urban growth management. *Fifth Iran Data Mining Conference (IDMC 2011)*, Amirkabir University of Technology, Tehran, Iran, December 13–14.
17. Fardad, M., Alesheikh, A. A., & **Khajavigodellou, Y.** (2011). Evaluation of landslide hazard mapping using fuzzy logic in GIS. *IDMC 2011*, Amirkabir University of Technology, Tehran, Iran, December 13–14.
18. Yousefi, M., Fardad, M., & **Khajavigodellou, Y.** (2011). Integrating GIS and remote sensing with a cellular automata (CA) model for modeling urban development: A new approach to sustainable urban development. *Iran National Environment Conference*, University of Malayer, Iran, December 28.

TEACHING EXPERIENCE

MICHIGAN STATE UNIVERSITY

- 2022 – 2025 **Teaching Assistant & Instructor**, Online Geography (On-GEO)
 Summer 2022, Fall 2022, Spring 2023, Summer 2023, Spring 2024, Summer 2024, Fall 2024, Spring 2025
- 2023 – 2026 **Teaching Assistant & Instructor**, Department of Geography (in person)
 Fall 2023, Fall 2025, Spring 2026

LECTURER APPOINTMENTS

- 2013 – 2015 **Lecturer**, Remote Sensing & GIS
Salahaddin University, Erbil, Kurdistan Region, Iraq
- 2013 – 2014 **Lecturer**, GIS
Erbil Technical University, Kurdistan Region, Iraq
- 2011 – 2012 **Lecturer**, Remote Sensing & GIS
Islamic Azad University, Iran
- 2011 – 2012 **Lecturer**, Remote Sensing & GIS
Payame Noor University, Iran

PROFESSIONAL EXPERIENCE

- 2007 – 2013 **Manager & Supervisor**, GIS and Remote Sensing Projects
A.S.O. Consulting Engineers, GIS & Remote Sensing Department, Sanadaj, Iran
- 2004 – 2006 **Surveying Engineer**
K.P.P. Consulting Engineers, West Azerbaijan, Iran

AWARDS & FELLOWSHIPS

2026	Michael A. Graff Dissertation Completion Award, Michigan State University
2026	Dissertation Completion Fellowship (DCF), Michigan State University
2026	Environmental Science & Policy Program (ESPP) Competitive Research Award, Michigan State University
2026	College of Social Science Dean's Small Grant Award, Michigan State University
2022 – 2026	Teaching Assistant Fellowship, Michigan State University
2021 – 2024	CSS Summer Early Start Award, Michigan State University
2021 – 2022	AAGA Ph.D. Fellowship, Michigan State University
2015	National Science Foundation Travel Award, Geocomputation 2015
2014	Travel Award, Michigan State University — Spatial Accuracy 2014

LEADERSHIP & UNIVERSITY SERVICE

2024 – 2025	Representative, Environmental Science & Policy Program (ESPP) to the College of Social Science Advisory Board, Michigan State University
2024 – 2025	Member, College of Social Science Advisory Board — Diversity, Equity & Inclusion Committee, Michigan State University
2023 – 2025	Member, Environmental Science & Policy Program Student Council, Michigan State University
2023 – 2024	Peer Mentor, MSU Peer Mentorship Program
2022 – 2023	Graduate Student Representative, Department of Geography, Michigan State University

PROFESSIONAL AFFILIATIONS

American Association of Geographers (AAG) | American Geophysical Union (AGU) | SPIE — International Society for Optics and Photonics

TECHNICAL SKILLS

Programming	Python · R
GIS & Remote Sensing	ArcGIS Pro · ArcGIS · ERDAS IMAGINE · ENVI · Civil 3D

LANGUAGES

Native	Kurdish · Azerbaijani · Persian
Fluent	English · Turkish
Basic	Arabic