Sarigai (Rose) Sarigai

734-882-7270 | rsa@unm.edu | sarigaigis@gmail.com
Personal website | Google Scholar | ResearchGate

EDUCATION

University of New Mexico   Albuquerque, NM
Doctor of Philosophy in Geography, concentration in GIScience   August 2020 - May 2025 (expected)
All But Dissertation (ABD)   March 2023 - present
Ph.D. Advisor: Dr. Liping Yang
Dissertation title: *A universal computational and visual framework for sensing geospatial big data using geovisualization and GeoAI*
Current GPA 3. 94

Eastern Michigan University   Ypsilanti, MI
Master of Science in Geographic Information Science   December 2019
M.S. Advisor: Dr. Yichun Xie
Thesis title: Monitoring urban black-odorous water by using hyperspectral data and machine learning
Overall GPA 3. 88

Heilongjiang University   Harbin, China
Bachelor of Engineering in Hydrology and Hydropower Engineering   July 2016

RESEARCH INTERESTS

● Geographic Information Science (GIScience), Geospatial Big Data, Geovisualization, Geospatial Artificial Intelligence (GeoAI)
● Remote Sensing, Deep Learning, Machine Learning
● Urban Water Pollution, Grassland Degradation

PEER REVIEWED PUBLICATIONS

1. **Sarigai S**, Liping Yang, Katie Slack, K. Maria D. Lane, Michaela Buenemann, Qiusheng Wu, Gordon Woodhull, Joshua Driscol (2024). dciWebMapper: A data-driven and coordinated-view-enabled interactive web mapping framework for visualizing and sensing high-dimensional geospatial (big) data. *Transactions in GIS*.

2. Stuhlmacher, M., Woods, J., Yang, L., & **Sarigai, S.** (2024). How Does the Composition and Configuration of Green Space Influence Urban Noise?: A Systematic Literature Review. *Current Landscape Ecology Reports*, 1-15.

3. Yang, L., Driscol, J., **Sarigai, S.**, Wu, Q., Chen, H., & Lippitt, C. D. (2022). Google earth engine and artificial intelligence (ai): a comprehensive review. *Remote Sensing*, 14(14), 3253.

4. Yang, L., Driscol, J., **Sarigai, S.**, Wu, Q., Lippitt, C. D., & Morgan, M. (2022). Towards Synoptic Water Monitoring Systems: A Review of AI Methods for Automating Water Body Detection and Water Quality Monitoring Using Remote Sensing. *Sensors*, 22(6), 2416.

5. **Sarigai, S.**, Yang, J., Zhou, A., Han, L., Li, Y., & Xie, Y. (2021). Monitoring urban black-odorous water by using hyperspectral data and machine learning. *Environmental Pollution*, 269, 116166.

RESEARCH GRANTS

The University Consortium for Geographic Information Science UCGIS
Co-PI   July 15, 2022 – February 15, 2023
Liping Yang (PI), Sarigai Sarigai (Co-PI), Carolyn Merry Mini-Grant project (part of the TRELIS program),
iTRELISmap: an interactive web app for connecting and tracking TRELISers

PRESENTATIONS

University of New Mexico, LoboBITES Finals Competition   Albuquerque, NM
Presenter   Nov 14, 2024
Sarigai Sarigai. Developing a Framework for Interactive Web Map Apps to Sense and Visualize Geospatial (Big)
Data

American Association of Geographers, 2022 Annual Meeting   Denver, CO
Presenter   April 5, 2022
Sarigai Sarigai. An Interactive Web-mapping Framework for Visualizing Geospatial Big Data

American Association of Geographers, 2019 Annual Meeting   Washington, DC
Presenter   April 5, 2019
Sarigai Sarigai, Ji Yang, Alicia Zhou, Liusheng Han, Yong Li, Yichun Xie. Monitoring urban black-odorous water
by using hyperspectral data and machine learning

TEACHING EXPERIENCE

University of New Mexico, Department of Geography & Environmental Studies   Albuquerque, NM
Teaching Assistant, People and Place   Spring 2025

University of New Mexico, Department of Geography & Environmental Studies   Albuquerque, NM
Instructor of record, Map and GIScience   Spring 2024
Under the supervision of faculty, developed curriculum, instructed, and graded for an introductory
undergraduate course.

Guest lecture at class GEOG525 at the University of New Mexico   Albuquerque, NM
Presenter   November 5, 2023
Introduction to ArcGIS StoryMaps

University of New Mexico, Department of Geography & Environmental Studies   Albuquerque, NM
Teaching Assistant, Intro to GIS, Dr. Liping Yang   Fall 2023
Under supervision of faculty, assisted with lab curriculum development, lab instruction delivery, and grading
for two sections of an Introductory graduate course.

Eastern Michigan University, Department of Geography and Geology   Ypsilanti, MI
Graduate Assistant/ Teaching Assistant   Fall 2017- Winter 2018
Under supervision of faculty, assisted with students' coursework and projects, students' difficulty in GIS
software such as ArcGIS and QGIS, and grading for an introductory undergraduate course.

RESEARCH EXPERIENCE

University of New Mexico, Geospatial and Population Studies   Albuquerque, NM
Student GIS Analyst   August 19, 2024 - present
- Utilize GIS software to geocode traffic crash locations accurately, ensuring data accuracy and
  completeness, and maintaining an organized database of geocoded traffic crash data.

- Perform statistical and spatial analyses on traffic crash data, identify trends and hotspots, and generate reports and visualizations to communicate findings.
- Design and develop interactive web applications for visualizing traffic crash data, integrating geocoded and analyzed data into user-friendly web interfaces, and ensuring accessibility and responsiveness.

The Nature Conservancy   Remote
Innovative Intern, New Jersey Chapter, Cities Team   May 28 - August 16, 2024
Worked to develop methods and models for estimating the impact of trees in mitigating urban heat

University of New Mexico, NASA   Albuquerque, NM
Research Assistant, Dr. Liping Yang   September 1, 2022 – May 31, 2023
Predictive Intelligence for Pandemic Prevention Phase I: Development Grants (PIPP Phase I)
- Assisted with JavaScript and Python coding to develop web tools powered by AI and visualization
- Wrote up manuscripts for publication
- Prepared video and textual tutorials on how to use the to-be-developed web app tools

University of New Mexico, GeoAIR Lab   Albuquerque, NM
Graduate Research Assistant, Dr. Liping Yang   Fall 2020-Summer 2023
- Worked on multiple research projects (including one NSF and one NASA project) leveraging geospatial artificial intelligence for image analysis
- Gathered data related to the assigned project and used (advanced) machine learning and data mining technologies to derive insights from gathered data and information using Python and JavaScript

Eastern Michigan University, Institute of Geospatial Research and Education
Ypsilanti, MI
Intern for NSF Grace (GIS Resources and Applications for Career Education) Project   May 2018 - August 2018
- Trained high school students in ArcGIS Online & ArcGIS Pro
- Oversaw high school students by email in GIS training and liaised between EMU's IGRE center & high school site contact
- Granted licenses to high school students and geomentors via the Grace database
- Maintain and develop Grace project's official website

Eastern Michigan University, Institute of Geospatial Research and Education   Ypsilanti, MI
Graduate Research Assistant, Dr. Yichun Xie   *Fall 2017- Winter 2019*
- Analyze socioeconomic data and environmental data using R, SPSS, and Microsoft Excel
- Mapping using ArcMap, ArcGIS Online, and ArcGIS Pro; Image processing using ArcGIS

Inner Mongolia Grassland Survey and Planning Institute   Xilinhot, China
Field Work Assistant   Summer, 2017 & Summer, 2016
- Assisted in plant investigation by quadrat method
- Participated in UAV spectrometer experiment (Application of hyperspectral data in grassland investigation and ecological monitoring)

SKILLS

Language
- Mongolian (Native);
- Chinese (Native);
- English (Fluent in speaking; proficient in writing);
- Korean (Elementary proficiency)

Technical Skills
- Proficient in ArcGIS Pro, ArcMap, ArcGIS Online, QGIS, Story Mapping
- Proficient in developing Web mapping applications
- Skilled in Google Earth Engine, ERDAS Imagine, ENVI, TerrSet
- Skilled in Machine Learning
- Coding skills in Python, JavaScript, HTML/CSS, R; Skilled in Microsoft Excel, Microsoft Word, Microsoft PowerPoint

AWARDS

Graduate Studies/Office of Financial Aid, The University of New Mexico   November 2024
Graduate Student Success Scholarships (GSSS) $6000

Graduate Studies, The University of New Mexico   March 2024
The Graduate Scholarship Fund (GSF) $900

Department of Geography & Environmental Studies, University of New Mexico   March 10, 2022
Snead Scholarship Award $500

Department of Geography & Geology, Eastern Michigan University
- Outstanding Geographic Information Systems Graduate Student   April 29, 2020
- Certificate of Academic Honors   April 29, 2020

TRAINING

Michigan Sustainability Cases, Galaxy Sustainability Learning Exchange   2018, Ann Arbor, Michigan
- Trained on various kinds of skills needed for a case study
- Worked with researchers from different backgrounds on sustainability case studies
- Worked on the case study of "The degradation of Hulun Lake, Inner Mongolia, China"

Heilongjiang University
Senior's Intern program   2016, Hubei, China
- Trained at the center of the South-North Water Transfer Project located in Handan, China
- Trained at the developing center of Gezhou Dam in Hubei, China
- Trained at the Three Gorges Dam in Hubei, China

Engineering Geology Practice   2014, Beidaihe, China
Strengthened academic knowledge and integrated theory and practice by collecting in situ data and field internship.

LEADERSHIP ACTIVITIES

2019 ArcGIS Online Competition for US HS+MS Students   Ypsilanti, Michigan
Co-leader   January 2019 - June 2019
- Communicated with geo-mentors and teachers
- Evaluated and judged students' work