

# Sarigai (Rose) Sarigai

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<https://sarigai-geoair.github.io/>

## EDUCATION

### University of New Mexico

Doctor of Philosophy in Geography, emphasis in GIScience

Dissertation topic "A universal computational and visual framework for sensing geospatial big data using geovisualization and GeoAI"

Albuquerque, NM

August 2020 - present

Current GPA 3.94

### Eastern Michigan University

Master of Science in Geographic Information Science

Ypsilanti, MI

December 2019

Overall GPA 3.88

### Heilongjiang University

Bachelor of Engineering in Hydrology and Hydropower Engineering

Harbin, China

July 2016

## RELEVANT EXPERIENCE

### University of New Mexico, Department of Geography & Environmental Studies

Instructor of record, Map and GIScience

Albuquerque, NM

Spring 2024

Under the supervision of faculty, developed curriculum, instructed, and graded for an introductory undergraduate course (27 students).

### 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 (14 students).

### University of New Mexico, GeoAIR Lab

Research Assistant, Dr. Liping Yang

Fall 2020-Summer 2023

- Supported research project using 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/IGRE

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

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

**Eastern Michigan University, Department of Geography and Geology**  
*Graduate Assistant/ Teaching Assistant*

*Ypsilanti, MI*  
*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.

**Inner Mongolia Grassland Survey and Planning Institute**  
*Field Work Assistant*

*Xilinhot, China*  
*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)

### **PEER REVIEWED PUBLICATIONS**

**Sarigai**, Ji Yang, Alicia Zhou, Liusheng Han, Yong Li, Yichun Xie. Monitoring urban black-odorous water by using hyperspectral data and machine learning, *Environmental Pollution*, Volume 269, 2021, 116166, ISSN 0269-7491, <https://doi.org/10.1016/j.envpol.2020.116166>.

Yang, L., Driscoll, 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.

Yang, L., Driscoll, 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.

### **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

**The National Aeronautics and Space Administration**  
*Research Assistant*

*September 1, 2022 – May 31, 2023*

Joseph Cook (PI) 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

### **PRESENTATIONS**

**Invited talks for class GEOG525 at the University of New Mexico**  
*Presenter*

*Albuquerque, NM*  
*November 5, 2023*

Introduction to ArcGIS StoryMaps

**American Association of Geographers, 2022 Annual Meeting**  
*Presenter*

*Denver, CO*  
*April 5, 2022*

Sarigai. An Interactive Web-mapping Framework for Visualizing Geospatial Big Data

**American Association of Geographers, 2019 Annual Meeting**  
*Presenter*

*Washington, DC*  
*April 5, 2019*

Sarigai, Ji Yang, Alicia Zhou, Liusheng Han, Yong Li, Yichun Xie. Monitoring urban black-odorous water by using hyperspectral data and machine learning

## SKILLS

### Language

Mongolian (Native, proficient in writing in both traditional Mongolian script and Cyrillic Mongolian Alphabet)

Chinese (Native)

English (Fluent in speaking; proficient in writing)

Korean (Elementary proficiency)

### Technical Skills

- Proficient in ArcMap, QGIS, ArcGIS Pro, ArcCatalog, ArcGIS Online, Story Mapping
- Skilled in Google Earth Engine, ERDAS Imagine, ENVI, TerrSet
- Coding skills in Python, JavaScript, HTML/CSS, R
- Skilled in Microsoft Excel, Microsoft Word, Microsoft PowerPoint

## AWARDS

**Department of Geography & Environmental Studies, University of New Mexico**

Snead Scholarship Award

*March 10, 2022*

**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 environmentally minded people 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