Bikram Parajuli

PhD Candidate, Department of Geography and Environmental Sustainability
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Education

PhD in Geography and Environmental Sustainability, University of Oklahoma (2022-Present)
Dissertation: Optimizing the Deployment of Single and Dual-Doppler Mobile Weather Radars in Flat Regions: A Coverage-Based Location Approach for Enhanced Meteorological Observations.
Advisor: Dr. Xin (Selena) Feng

Master of Engineering in Cartography and Geographical Information Engineering, Wuhan University, China (2019 -2021)
Thesis: Spatiotemporal Analysis of Historical Drought in Ganga-Brahmaputra Basin
Advisor: Dr. Xiang Zhang

BE Geomatics Engineering, Institute of Engineering, Tribhuvan University, Nepal (2014 - 2018)

Research Interests

Spatial optimization; facility location modeling; continuous-space optimization; extreme weather; remote sensing; GeoAI; spatial statistics; data assimilation; climate and drought analysis.

Publications

1. **Parajuli, Bikram**, and Xin Feng. "Strategic Deployment of a Single Mobile Weather Radar for the Enhancement of Meteorological Observation: A Coverage-Based Location Problem." *Remote Sensing* 17, no. 5 (2025): 870.
2. Feng, Xin, David Schvartzman, **Bikram Parajuli**, and Xuguang Wang. "Enhancing Meteorological Mobile Radar Observations through Radar Location Optimization." *IEEE Transactions on Geoscience and Remote Sensing* (2024).
3. **Parajuli, Bikram**, Xiang Zhang, Sudip Deuja, and Yingbing Liu. "Regional and Seasonal Precipitation and Drought Trends in Ganga–Brahmaputra Basin." *Water* 13, no. 16 (2021): 2218.

Work in Progress

4. **Parajuli, Bikram**, and Xin Feng. "Continuous Multi-Facility Location Problem with Inter-Facility Separation and Obstacle-Constrained Overlapping Service Coverage." *Submitted to Journal of Geographical Systems.*
5. **Parajuli, Bikram**, and Xin Feng. "Strategic Deployment of Mobile Weather Radar to Improve Storm-Scale Data Assimilation." *In Preparation.*

Presentations and Posters

1. Siting Observation Facilities in Continuous Space: A Multi-Facility Location Problem with Obstacle-Constrained Overlapping Coverage and Geometric Separation. **Bikram Parajuli**, Xin (Selena) Feng, *(AAG-2026)*. Presentation.
2. GIS for Strategic Deployment of Mobile Weather Radar(s) in Continuous Space. **Bikram Parajuli**, Xin (Selena) Feng, *(SCAUG 2025, Oklahoma City)*. Presentation.
3. GIS Based Optimization of Dual-Doppler Mobile Radar Configuration in Continuous Space for Effective Tornado Observations. **Bikram Parajuli**, Xin (Selena) Feng, *(OU graduate & Postdoc Research & Scholarly Activity Day-2025)*. Poster.
4. Mapping the Spatial Variation of Climate Change in the Ganga-Brahmaputra Basin. **Bikram Parajuli**, University of Oklahoma *(Graduate Climate Conference-2024)*. Presentation.
5. Strategic Deployment of a Single Mobile Weather Radar for the Enhancement of Meteorological Observation: A Coverage-Based Location Problem. **Bikram Parajuli**, University of Oklahoma, Xin (Selena) Feng, University of Oklahoma, *(AGU-2024)*. Poster.
6. Where to Deploy a Mobile Weather Radar? A GIS-Based Approach for Optimizing Weather Observations. **Bikram Parajuli**, Xin (Selena) Feng, *(CSA GIS day-2024)*. Poster.
7. A cover-based single facility location problem with continuous heterogeneous demand. **Bikram Parajuli**, University of Oklahoma, Xin (Selena) Feng, University of Oklahoma *(NARSC-2023)*. Presentation.
8. Enhancing meteorological observation through location optimization of mobile radar deployment. Xin (Selena) Feng, University of Oklahoma, David Schvartzman, University of Oklahoma, **Bikram Parajuli**, University of Oklahoma, Xuguang Wang, University of Oklahoma *(NARSC-2023)*

Teaching Experience

1. **Instructor of Record** — GIS 2023: Introduction to Spatial Thinking and Computer Mapping, Fall 2025
2. Department of Geography and Environmental Sustainability, University of Oklahoma
   Covered core GIS principles with modules on cartography, web mapping, remote sensing, and photogrammetry basics, emphasizing effective spatial data analysis and communication.

3. **Teaching Assistant** — GIS 4453/5453: Advanced GIS and Spatial Analysis, University of Oklahoma Spring 2025

4. **Teaching Assistant** — GEOG 4233/5233: Digital Image Processing, University of Oklahoma Spring 2025

5. **Teaching Assistant** — GEOG 1114: Physical Geography Laboratory, University of Oklahoma Fall 2024

6. **Instructor of Record** — Adjustment of Observations Spring 2022
   Institute of Engineering, Tribhuvan University

Invited Lectures and Laboratory Sessions

7. GIS 2023: Introduction to Spatial Thinking and Computer Mapping, Spring 2025, University of Oklahoma
8. GIS 5833: Environmental Spatial Modeling, Spring 2024, University of Oklahoma

Awards and Honors

1. First Place, Graduate & Postdoctoral Research and Scholarly Activity Day Poster Competition, University of Oklahoma Graduate College ($1500) 2025
   University-wide competition for both postdoctoral scholars and graduate students.
2. Armstrong Memorial Scholarship ($4000) 2025
3. Ralph & Margaret Olson Geography Scholarship ($1750) 2025
4. Graduate Climate Conference Travel Grant ($ 450) 2024
5. CyberTraining for Disaster Management Workshop Travel Grant ($300) 2024
6. Graduate Student Senate (GSS) Conference Grant ($450) 2024
7. Second Place, GIS Day Graduate Poster Competition, Center for Spatial Analysis, University of Oklahoma ($800) 2024
   Competition among graduate students from the University of Oklahoma and other institutions.
8. Graduate Student Senate (GSS) Conference Grant ($595) 2023
9. Outstanding Participant Award in Machine Learning, International GeoInformatics Summer School, Wuhan University 2020
10. China Scholarship Council (CSC) Scholarship for the Master of Engineering in Cartography and Geographical Information Engineering 2019

Mentoring

Undergraduate Students

1. **Colin Harold Chafin**, *Severe Weather Frequency Trends in the State of Ohio*, University of Oklahoma, Third Place, GIS Day Graduate Poster Competition, 2025
2. **Natalie Hughes**, *Who Has Access to the Skies? Examining Socioeconomic Disparities in Airport Distribution Across Texas*, University of Oklahoma, 2025
3. **Matt Mynk**, *North Atlantic Hurricane Landfalls from 1950–2024*, University of Oklahoma, 2025

Academic Workshops and Summer Schools

1. CyberTraining: Broadening Adoption of Cyberinfrastructure in Disaster Management, Natural Hazards Research and Applications Workshop (49th Annual), Denver, July 2024.
2. International GeoInformatics Summer School, State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing (LIESMARS), Wuhan University, 2020.

Professional Appointments

1. **Teaching Assistant** — Aug 2024 – present
   Department of Geography and Environmental Sustainability, University of Oklahoma
   Served as instructor of record and supported teaching and labs for multiple intermediate and advanced GIS courses.
2. **Research Assistant** — Aug 2022 – July 2024
   Department of Geography and Environmental Sustainability, University of Oklahoma
   Conducted research in radar deployment optimization, developing computational frameworks and Python-based algorithms to support spatial optimization and atmospheric observation studies.
3. **Assistant Professor** — May 2022 – Aug 2022
   Institute of Engineering, Tribhuvan University
   Served as Instructor of record and supervised field surveying camps for undergraduate students in Geomatics Engineering, providing training in surveying methods, data collection, and field mapping.
4. **Intern (GIS and Surveying)** — Dec 2020 – Feb 2021
   Map Nepal Engineering Consultancy Pvt. Ltd, Nepal
5. **GIS Analyst** — July 2019 – Aug 2019
   NAXA Pvt Ltd., Nepal

Technical Skills

Software
ArcGIS, QGIS, ERDAS, HEC-RAS, Agisoft, RTKLIB

Programming languages
Expert in: Python, R
Familiar with: C, MATLAB

Surveying
Land surveying (total station, theodolite, leveling), photogrammetry, GNSS.

Natural Languages
English (fluent), Nepali (native), Hindi (proficient), Chinese (elementary)

Peer reviewer:

1. Natural Hazards
2. Computational Urban Science

Professional Memberships

1. American Geophysical Union (AGU) — Member, *2024–present*
2. American Association of Geographers (AAG) — Member, *2023–2024*
3. English GeoScience Café (EGSC), LIESMARS, Wuhan University — Member, *2019–2021*
4. Geomatics Engineering Student Association Nepal (GESAN) — Member, *2016–2018*

Volunteer Work

1. University of Oklahoma food pantry (2023)
2. The Big Event community service (2024)