Teaching Philosophy and Statement

Ruowei Liu

My teaching philosophy is grounded in three core principles: **(1)** adaptive instruction based on student feedback, **(2)** active learning that sparks curiosity, and **(3)** cultivating spatial and temporal thinking—the intellectual core of geography. These principles reflect my belief that effective teaching is both reflective and dynamic, evolving through continual dialogue between instructor and students.

Adaptive Instruction: Centering the Student

Teaching, in my view, is a responsive, student-centered process. Since each cohort of students brings unique perspectives and needs, I conduct three anonymous surveys during the semester to understand their expectations and learning struggles. This direct feedback allows me to continually adjust content, pacing, and in-class activities. My courses evolve with this student input, becoming richer and more effective over time.

Active Learning and Curiosity-Driven Engagement

I believe that curiosity is the foundation of lasting learning. My teaching goal is to help students experience the excitement of geographic discovery through interactive, creative, and applied exercises such as videos, mapping challenges, and small projects that connect abstract concepts to tangible experiences. For example, when teaching map projections, I ask students to construct a small paper globe and physically "unfold" it into a map, visually demonstrating distortion.

Cultivating Spatial and Temporal Thinking

The true power of geography is its unique spatial and temporal lens. My own dissertation research, which evaluates sampling bias in geotagged social media data across spatial, temporal, and demographic dimensions, embodies this approach. By sharing real research examples in class, I help students see how geographic reasoning can be applied to real-world challenges such as public health, urban equity, and environmental change. I encourage students to think geographically—to ask how spatial context shapes evidence, why place matters, and how temporal patterns reveal underlying dynamics. In doing so, I aim to develop their analytical, ethical, and critical reasoning skills that extend well beyond the classroom.

Teaching Experience and Impact

This philosophy has been applied across the full breadth of the GIS curriculum. At the University of Georgia, I have supported and led undergraduate and graduate courses including:

- **Introduction to GIScience** – foundational theory and applications
- **Advanced Geospatial Analysis** – spatial statistics and modeling
- **Remote Sensing and Digital Image Analysis** – satellite and drone-based data analysis
- **Transportation Modeling and GIS** – spatial networks and accessibility
- **World Geography & Environmental Geography** – bridging human and physical geographies

Across more than 17 course sections, my teaching evaluations consistently average above 4.0 on a 5-point scale, with students describing me as clear, patient, and responsive. Students consistently

describe this teaching style as "clear," "supportive," and "approachable," noting that I am responsive, "patient," and "able to explain complex concepts in an intuitive way."

In several courses, I have **redesigned and reformatted** lab tutorials to enhance clarity, better reflect evolving technologies, and align with emerging trends in GIScience, such as machine learning and GeoAI applications. This proactive approach to course design and student communication has also been commended by faculty supervisors.

I am passionate in mentoring students from diverse backgrounds and helping them see the relevance of GIS to their own communities and goals.

Appendix A: Selected Student Comments:

- "Ruowei was a wonderful TA — very patient with all of my questions and always willing to help."
- "She responds to emails quickly and provides great resources for the labs."
- "Instructor was great and very helpful. I learned a lot from the labs."
- "The TA was very helpful with lab assignments."
- "I really liked this lab and thought the TA and Professor were both very helpful and kept the labs reasonable so students could learn and have the chance to succeed."
- "Lab activities were very helpful in demonstrating concepts."