

HDR² From Harnessing the Data Revolution to Harvesting the Data Revolution

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Institute for Geospatial Understanding through an Integrative Discovery Environment (I-GUIDE)

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In today's interconnected world, disasters such as floods and droughts are rarely isolated events, and their cascading effects are often felt far beyond their locations of origin. The Institute for Geospatial Understanding through an Integrative Discovery Environment (I-GUIDE) creates an open platform for harnessing geospatial data to better understand interconnected interactions across diverse socioeconomic-environmental systems for enhancing community resilience and environmental sustainability. I-GUIDE nurtures a diverse and inclusive geospatial discovery community across many disciplines by bridging disciplinary digital data divides with broader impacts amplified through a well-trained and diverse workforce and proactive engagement of minority and underrepresented groups. I-GUIDE transforms geospatial data-intensive sciences through integration of artificial intelligence and cyberGIS (cyber-based geospatial information science and systems), reproducible data-intensive analytics and modeling, FAIR (Findable, Accessible, Interoperable, and Reusable) data principles, and innovative education and workforce development programs. This transformation catalyzes new convergence science necessary to drive advances across many fields ranging from computer, data and information sciences to atmospheric sciences, ecology, economics, environmental science and engineering, human-environment and geographical sciences, hydrology and water sciences, industrial engineering, sociology, and statistics. Through synergistic advances of these fields, I-GUIDE is empowering diverse communities to produce data-intensive solutions to society's resilience and sustainability challenges such as biodiversity loss, and food and water insecurity.

Research

Education and Outreach

Data & Cyberinfrastructure

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