Geographic Information Science Minor

Minor

Geography and Philosophy
College of Liberal Arts

Because of the growing awareness across disciplines of the strategic value of Geographic Information Science (GIS), particularly through its ability to understand better the complexity of economic, environmental and social systems, the U.S. Department of Labor recently identified GIS as one of nine “high growth industries”. For example, GIS has been instrumental to emergency managers in the face of natural hazards, who utilize it to determine how communities can best mitigate such disasters. Urban planners utilize GIS to optimize existing systems and services, while forecasting where they will be most needed in the future based on emerging population and growth trends. Remote sensing allows land managers to monitor environmental changes via satellite and drone technologies, and inform adaptation strategies for industry and communities alike. Spatial analysis provides epidemiologists with the tools necessary to track and forecast the spread of diseases, helping health care officials limit their impact. In each of these cases, GIS practitioners use geospatial technologies to create sustainable solutions to environmental, economic, and societal problems. Thus, the mission of the GIS BS program at UMD is to train future GIS professionals by providing theoretical and practical instruction, modeling and mentoring, and real-world professional experiences.

Why UMD

- Hands-on attention from faculty members: UMD GIS classes are small (typically less than 20), there is a GIS lab staffed with students to respond to your questions, professors have office hours and you will have a lot of support from the university as you learn GIS.
- Strong Integration with the MN GIS professional community: GIS professionals take part in the annual assessment of the GIS program and curriculum. As a result, the program is continually adapting to changes in the field and students are exposed to the skills that employers seek.

Acquired Skills

Graduates will:

1. Demonstrate the theoretical knowledge expected from an early-career GISP
2. Acquire, edit, query, analyze and visualize spatial data in the context of larger projects, at the level of an early-career GISP
3. Analyze a spatial question or problem, formalize hypotheses or solutions, then design and implement a workflow, at the level of an early-career GISP
4. Communicate their work effectively, through writing, speaking and producing effective visual representations of geographical information and analysis results
5. Articulate their personal strengths and skills as early-career GISPs as well as areas they wish grow in, and identify resources available to them for self-development
6. Demonstrate behavioral dispositions expected from GIS professionals
7. When confronted with professional situations, graduates will make decisions that conform to the GISP code of ethics

Career Possibilities

GIS is one of the fastest growing fields across all disciplines, and students will learn to integrate
analytical and creative problem-solving skills to solve real-world problems, while using cutting-edge technology. As a result, graduates are employed across industries including environmental and social-service consulting firms; local, regional, and national government organizations; and non-governmental organizations.

The majority of our students find employment as GIS technicians upon graduation from UMD, and stay in Minnesota. Our first graduates (2012-2013) are now moving up to more managerial positions. Most students applying get admitted to graduate school, but the vast majority of our students seeks immediate employment instead.

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