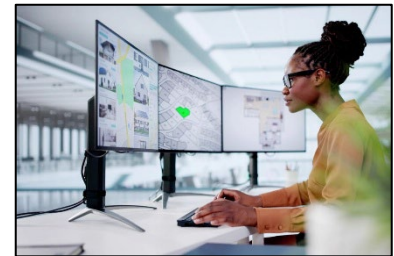


Geospatial technologies are transforming how organizations understand and respond to complex challenges. From mapping transportation networks and analyzing population trends to supporting business decisions and urban planning, geospatial professionals use location-based data to reveal patterns, solve problems, and improve decision-making. The **Geospatial Technologies & Location Analytics** pathway focuses on the collection, analysis, visualization, and interpretation of spatial data. Students develop expertise in Geographic Information Systems (GIS), remote sensing, web mapping, geospatial data management, spatial statistics, and location intelligence. These skills are increasingly sought by employers in government, consulting, technology, transportation, business analytics, public health, utilities, and nonprofit organizations.

Some of the critical questions that might be addressed with a career in these fields include:

- *Where should a new business be located?*
- *How can transportation systems be improved?*
- *What demographic trends are shaping communities?*
- *How can organizations better allocate resources?*
- *Where are opportunities and risks concentrated across a region?*



Careers

Careers in **Geospatial Technologies & Location Analytics** involve applying GIS, remote sensing, spatial modeling, and data science to support business, transportation, demographics, location intelligence, technology, and analytics.

Career	Potential Employers
GIS and Spatial Analysis	
Geospatial/GIS Analyst	Federal Agencies, State Agencies, Local Governments, Consulting Firms, Utilities
GIS Project Coordinator	Consulting Firms, Technology Companies, Government Agencies
Cartographer / Mapping Specialist	Government Agencies, Publishers, Consulting Firms
Location Intelligence & Business Analytics	
Location Intelligence Analyst	ESRI, Retail Companies, Real Estate Firms, Consulting Firms
Market Research Analyst	Retail Companies, Marketing Firms, Business Analytics Firms
Site Selection Analyst	Commercial Real Estate Firms, Retail Corporations, Consulting Firms
Business Intelligence Analyst	Technology Companies, Financial Institutions, Consulting Firms
Transportation & Urban Analytics	
Transportation Analyst	Transportation Agencies, MPOs, Consulting Firms
Urban Analytics Specialist	Municipal Governments, Planning Agencies, Consulting Firms
Infrastructure Planning Analyst	Engineering Firms, Utilities, Transportation Agencies
Remote Sensing & Geospatial Technologies	
Remote Sensing Analyst	NASA, NOAA, USGS, Private Industry
Drone Mapping Specialist	Engineering Firms, Surveying Firms, Utilities
Geospatial Data Scientist	Technology Companies, Government Agencies, Research Institutes
Geospatial Intelligence Analyst	Federal Agencies, Defense Contractors
Emerging Technologies	
Spatial Data Scientist	Research Institutes, Technology Companies, Government Agencies
Geospatial Software Developer	Technology Companies, Software Firms, Consulting Firms
Smart Cities Analyst	Municipal Governments, Technology Companies, Urban Innovation Labs

Coursework & Degree Options

The **Geospatial Technologies & Location Analytics** pathway is particularly well suited for Geography majors and students interested in GIS, data analytics, business intelligence, transportation systems, urban planning, location intelligence, and emerging geospatial technologies. Students interested in careers in geospatial technologies and analytics may wish to consider the following courses to fill elective requirements within the Geography major:



4-cr. Science & Technology laboratory courses:

- GEV 4363 – GIS for Conservation Management
- GEV 7041 – GIS for Environmental Systems¹

3-cr. Science & Technology elective courses:

- GEV 3521 – GIS for Urban Sustainability
- GEV 3750 – Remote Sensing
- GEV 3760 – Geospatial Applications in Environmental Science
- GEV 4301 – QGIS, Story Maps, Dashboarding, Drones, Google Earth Engine (1 credits)



3-credit elective Environmental Policy & Management courses:

- GEV 3570 – Land Use Planning and Management
- GEV 3580 – Natural Resources and Conservation



3-credit elective Environmental Social Science and Humanities courses:

- GEV 3004 – Geographies of Environmental Justice

Degree Options

- Students may wish to consider a double major or minor in **Computing Science**
- Students should consider applying for the **Undergraduate Geospatial Information Sciences Specialization**.
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Notes:

- ¹Advanced graduate level course open only to seniors with approval
- Students should seek internships that provide hands-on experience with GIS software, spatial databases, remote sensing technologies, drone mapping, data visualization, web mapping, and spatial analytics.
- Many study abroad programs have courses that are relevant to this pathway and may count towards major requirements. Your academic advisor and the Chair of the Department can provide guidance, along with the Office of Education Abroad, about programs and courses that would be a good fit with this pathway.
- There are additional thematic courses offered every semester that can count toward elective requirements that may be relevant to this pathway.

Alumni Spotlight

Martin Paz

B.A. Geography and Environmental Studies, Class of 2014

Founder and Principal, Tupana Strategy

After earning an M.S. in Geographic Information Science from the University of Buffalo and an M.B.A. at INSTEAD and several years employed at ESRI and Pix4D, Martin founded Tupana Strategy to provide support for geospatial firms entering the U.S. market.

<https://www.linkedin.com/in/sean-frangos-9b50a3143/>



To learn more about this and other career pathways, use the QR code, contact your academic advisor, or contact the Chair of the Department of Geography and the Environment for guidance.

The GEV Career Pathways Page:

