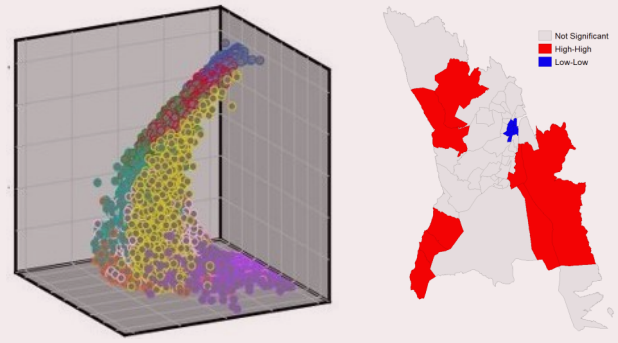
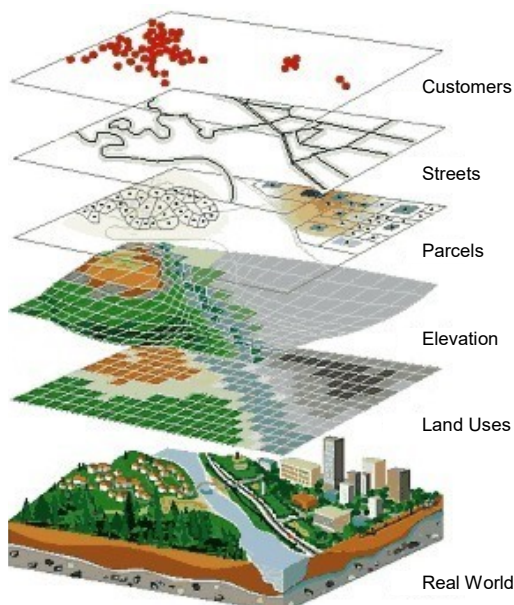


Geospatial Modelling and Analysis (GEOG 6120)/ Advanced GIS (GEOG 4261) Fall 2023



Why this course?

Spatial data is crucial since everything that happens has a location. Today, we have access to a massive amount of spatial data collected through various forms, such as via mobile apps and Earth observation satellite sensors. Analyzing this data presents challenges that can't be addressed using conventional statistical methods. Luckily, there are specialized techniques for spatial data analysis. Whether you're interested in geography, ecology, environmental science, urban planning, market analysis, or simply curious about why things occur



About the course

We explore advanced methods in spatial data analysis such as:

- Point pattern analysis (e.g., analyzing crime events)
- Spatial correlation and regression models (i.e., understanding the changing relationship between variables across space)
- Spatial segregation and clustering (e.g., determining areas in the city that receive the most rainfall?)
- Machine learning
- Image analysis (e.g., studying land cover changes over time)
- Spatial pattern analysis (e.g., measuring fragmentation level of forest patches)
- Point cloud and 3D spatial analysis (e.g., investigating how the height of buildings influences wind flow?)

And we don't stop here! This course provides you with hands-on experience through our dedicated lab component. Working individually and in group you'll work on solving real-world problems.

Prerequisite for this course is Geography 3260 or an equivalent course, with permission of the instructor. If you have any question about the course, please visit the department website or contact the course instructor, Dr. Mahyar Masoudi, at mahyar.masoudi@uwaterloo.ca.