

Geocomputation: research ON GIS or research WITH GIS?

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Abstract

Afficionados of Geocomputation may be divided into two types - those who do research ON GIScience, and those who do research (pure and applied) WITH GIScience. Currently, the top topics of research ON GIS as published in the last 3 years of IJGIS are:

1. Accuracy and errors (25)
2. Fuzzy logic & fuzzy classification (19)
3. Autocorrelation & Geostatistics (18)
4. Networks (13)
5. Ontologies (10)
6. Fractals & CA (6)
7. Social constructs (5)
8. Dynamic GIS/Agents (3)
9. Data mining (2)
10. Resolution and up/downscaling (1)

Research WITH GIS covers many fields too numerous to list, but makes use of standard facilities and software - there is often little questioning of the principles and assumptions involved. GIS plus numerical models are being increasingly used for integrated studies of landscapes, for modelling land cover change, for running hydrological models, etc. An important question is whether the current tools have sufficient theoretical underpinning to support the uses to which they are put. In short, how does a user decide whether the standard tools are sufficient for his/her purpose, or to call in a specialist from the first group to help?

This talk will analyse these problems and also present case studies where new methods of geocomputation can provide better insights into the fundamental aspects of spatial and temporal analysis, such as model integration and upscaling/downscaling of data.