

The logo for FOSS4G 2006, featuring a stylized red and white graphic that resembles a ribbon or a stylized letter 'G'.

FOSS4G2006 - Free And Open Source Software

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A web based GIS solution to capturing everyday "fuzzy" geography.

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The way we perceive areas affects most of our day-to-day activities. We may park away from "high crime areas" or "go downtown" for some shopping, without a clear geographical definition of what these terms mean. The areas don't usually represent discrete points or polygons, but are often "fuzzy" - with vague boundaries and variations within. Attention is rarely paid to this vernacular geography because its difficult and subjective nature makes it so hard to capture and use. Three open source GIS tools (using Java), together called "Tagger", have been developed to capture these "fuzzy" or "vague" psychogeographical areas and their associated attributes.

1. User input tool: The user is given a spray can tool, with which they can define fuzzy areas on a map. Attribute information can be tagged to the sprayed area.
2. Storage and weighting tool: this aggregates results from multiple users and stores their individual areas and attributes.
3. Querying tool: represents all users' aggregate data and searching for comments ranked according to perceived importance.

The live demonstration shows the Tagger system, allows a person to add their own inputs, their own "fuzzy" information, and any attribute information to the areas sprayed. The combined results from all users will also be seen, and can be queried.

The poster displays the architecture of the system and the application of Tagger on a study on people's perception of high crime areas in a West Yorkshire (UK) town. The results from the users were compared with actual recorded crime statistics to display commonly identified sources of threat versus actual levels of risk, and answer questions like "what level of crime do people notice as high" or "where do people have misperceptions of the level of risk from crime", as well as the users of the system to themselves gain from reflections such as "how scared of crime are my neighbours" and "does anyone else feel the same way as me".

While attribute information was collected in the example (the way people felt about an area), there is no reason why the system should not be used without this option

simply to delimit one type of geographical area ("where is your community?", "what areas do you know most about?").

There are difficulties in GIS when using "fuzzy" or "vague" data but there's also a great benefit from capturing vernacular geography. Improving the interface and integration with other geospatial tools is underway. Scope also exists for strengthening the analysis of "fuzzy" or "vague" data, and it is possible that this system could be an input into a more formal cognitive/semantic/ontological GIS.

Demonstration and poster of a web based Java GIS called Tagger, allowing people with minimal use of GIS to enter in "fuzzy vernacular" geographies, and attach attribute information, utilising a spray can tool, familiar from many image editing applications. Tools to aggregate and store users inputs and a tool to extract, combine and analyse the combined responses and attributes are also presented. Uses J2SE applet on client side, and J2EE Servlet or perl on server side.

The main components of the system are:

1. User input tool: The user is given a spray can tool, with which they can define fuzzy areas on a map. Attribute information can be tagged to the sprayed area.
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Future developments include: stronger analysis of the results, closer integration with other GIS software, changing interface/GUI, more examples and applications of the software, and research into fuzzy and vague GIS.

More information:

Project Homepage - <http://www.ccg.leeds.ac.uk/software/tagger/>

Presentations & Papers -

<http://www.ccg.leeds.ac.uk/software/tagger/docs/documents.html>

Other online demo: <http://www.saferbradfordinfo.org.uk/tagger/demo/>
(which part of the UK has the best food!)

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