



Bridging the semantic gap?

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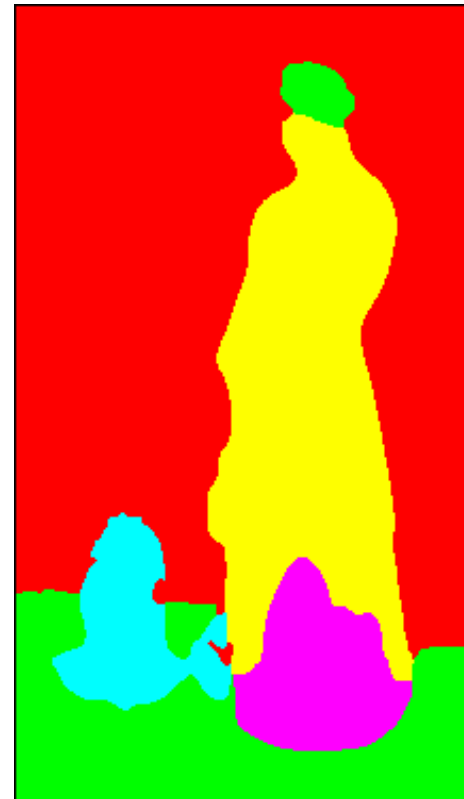
Technical coordinator Knowledge Web

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My bias

- Knowledge/ontology engineering
- Joint projects with image/video analysis group
- New Dutch Digital Heritage program
 - Semantic web, multimedia and NLP researchers working in Rijksmuseum, National Library, National Archive, public broadcast archive

Segmentation often requires user interaction



Automatic detection of concepts can be difficult even in “easy” cases

- *What is the color of this ape?*



Observations

- Direct link from automatically detected visual features to conceptual categories only works in limited, highly standardized domains
- Semantic-web researchers still concentrate mainly on text documents
 - Very few papers at ISWC'04
 - One application in Semantic Web Challenge used image-analysis technique (USC)

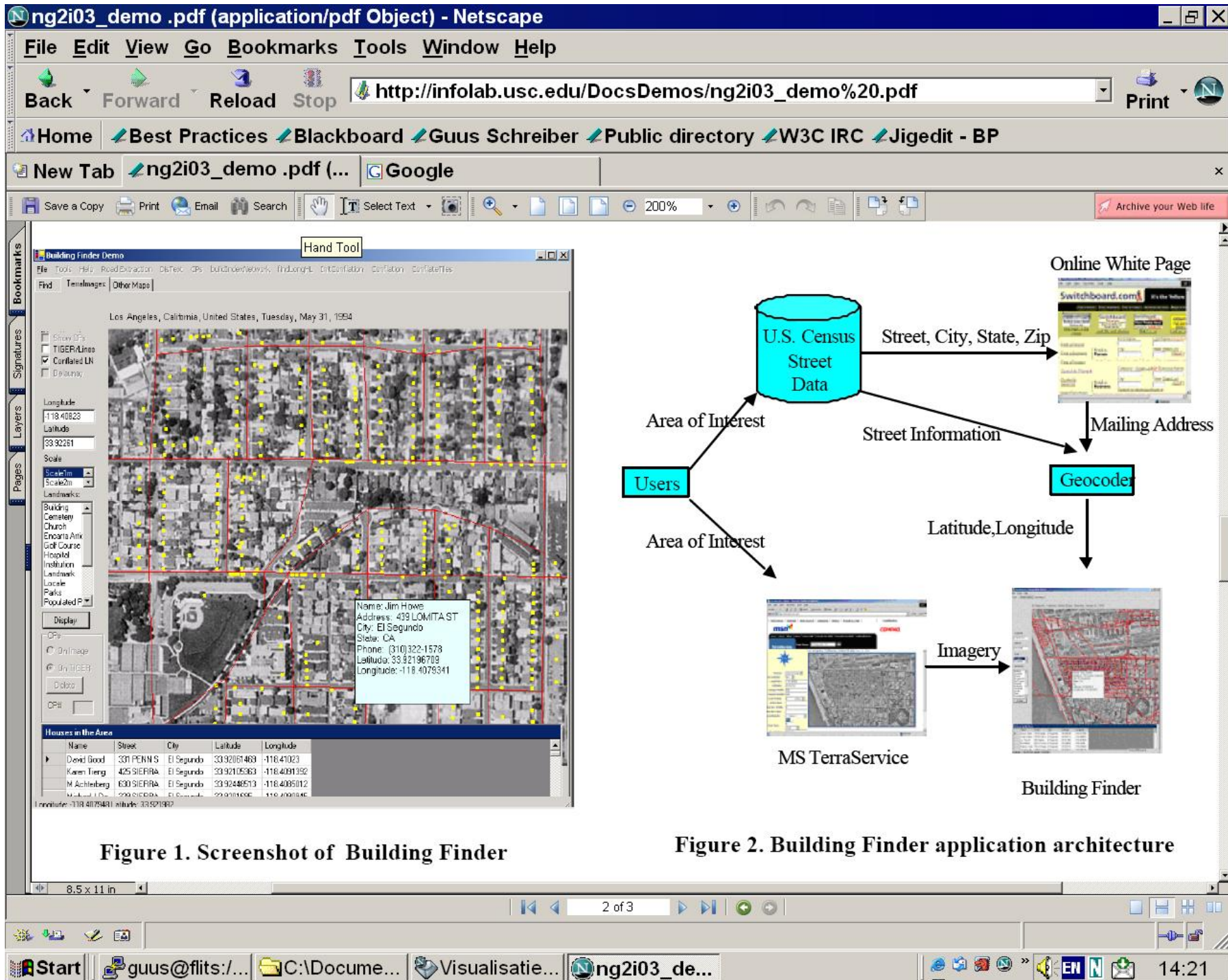


Figure 1. Screenshot of Building Finder

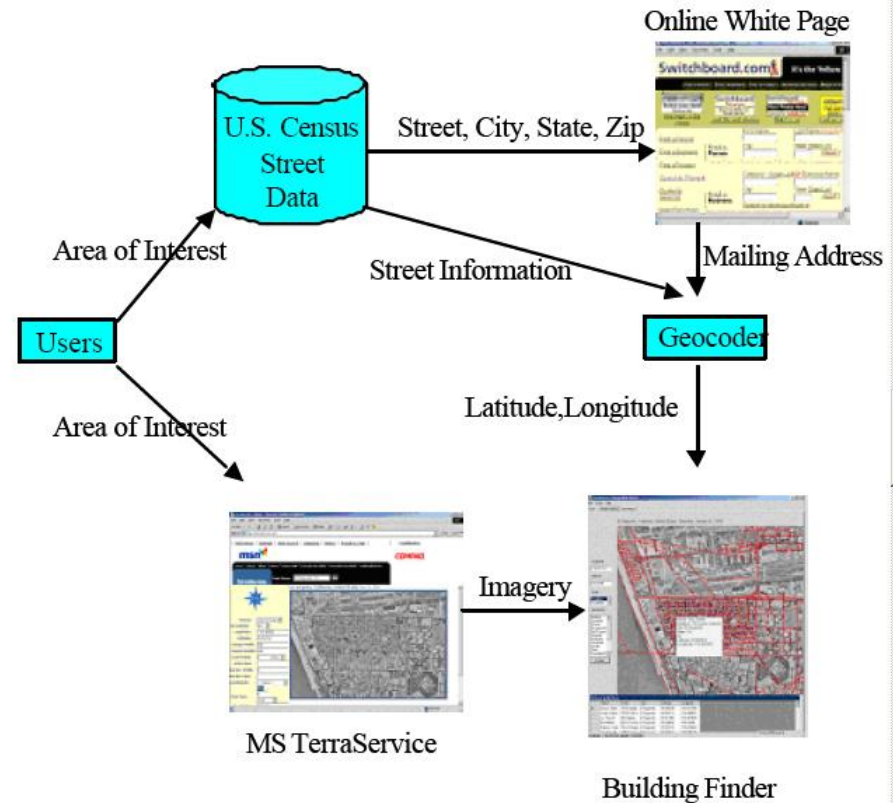


Figure 2. Building Finder application architecture

Example of promising lines of research

Visual WordNet (GE paper)

- Adding knowledge about visual characteristics to WordNet: mobility, color, ...
- Use this to prune the tree of categories when analyzing a visual object

Propositions

- Be aware of limitations of your own discipline
 - Solutions are likely to be heavily inter-disciplinary
- Be open to semi-interactive approaches
 - State-of-the-art suggests fully automatic content-based techniques have still limited practical value
- Submit more “semantics for multimedia” papers to the semantic-web conferences
- Put link between RDF/OEL/XML and multimedia standards (e.g. MPEG-7) high on the agenda