Interactive Exploration of a Geospatial Network Visualization

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Enables exploring a geospatial network.

Shows weighted spatial relations.

Provides multitouch interactions.

Invites users in semi-public spaces.
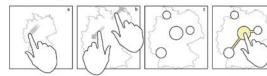

Weighted Connections

Relations between places are shown as connecting lines. Strength is mapped to connection thickness.

In our case-study, the size of a marker represents total publication number, while the thickness visualizes the number of papers co-authored with the connected institution.
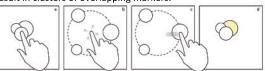
Multitouch Interactions

Our prototype is for a tabletop with multitouch capabilities.

Users can zoom and pan to areas they are interested in, and filter the data display by tapping on markers and countries.
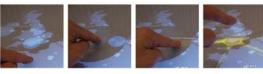
Exploding Menu

Places in close proximity shown at their original geo-location result in clusters of overlapping markers.

Our approach tackles the *fat finger problem* for geospatial data, and enables high precision selection of single markers.

When a user taps a marker cluster (a), a radial menu appears with all markers laid out in a concentric ring (b). After sliding and lifting the finger over one marker (c), it gets selected (d).

The *Exploding Menu* can be used for selecting multitple markers subsequently, as well as for deselection.

Conclusion

Our case-study enables users to **visually explore collaboration between institutions** based on co-authorhip data.

One of our main design goals was to facilitate first-time users to **walk-up-and-use** the system without training, in oder to **invite users to participate** and engage in discussions in a conference setting. The interaction capabilities were based on a set of design guidelines for **fluidity in visualization**.

Participants in **user studies we conducted at on-location demonstrations** found the prototype to be fun and easy-to-use. They found it **useful in reflecting on the research community**, and in understanding the geo-spatial spread of their scientific network.

We applied several existing techniques and adapted them for the context of geo-located co-authorship data visualization on a tabletop. While many of them are well-established, we see their **aesthetic and usable composition** in a conference setting as a successful design case study.