MOBILE
INFORMATION VISUALIZATION

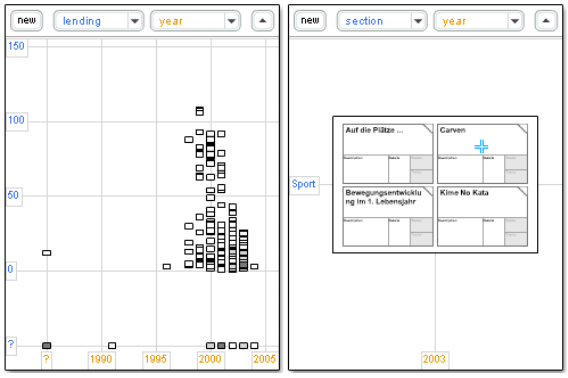
WG Human-Computer Interaction
University of Konstanz

Contact: Thorsten Buering
Email: Buering@inf.uni-konstanz.de
URL: http://hci.uni-konstanz.de

Address: Universitätsstr. 10, Box D73,
78457 Konstanz, Germany

Mobile Information Visualization aims to develop more efficient and satisfying user interfaces for searching and exploring large information spaces on small screens. If you have any questions regarding the ongoing research, please feel free to contact us.

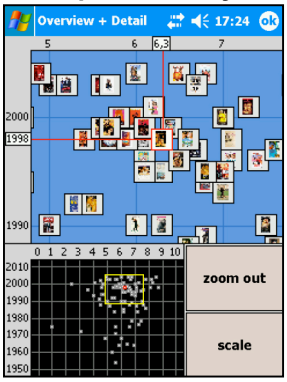
Interactive Scatterplot for PDAs



ZuiScat is a visualization concept for querying large information spaces on Personal Digital Assistants (PDA). Retrieval results are presented in a dynamic scatterplot, which is enhanced by geometric and semantic zoom techniques to provide smooth transitions from abstract visual encodings to data content. The same visualization is also used to manage bookmarks and to serve as a powerful query history tool.

Büring, T.; Reiterer, H.: ZuiScat: Querying and Visualizing Information Spaces on Personal Digital Assistants. In *Proceedings of Human computer interaction with mobile devices & services (MobileHCI)*, 2005.

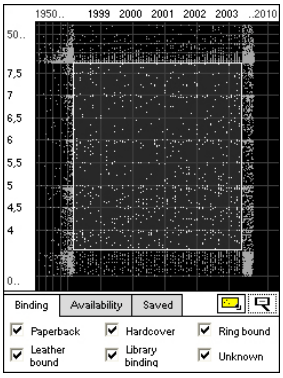
Overview-Supported Zooming on Small Screens and Individual Differences in Spatial Ability



While zoomable user interfaces can improve the usability of applications by easing data access, a drawback is that some users tend to become lost after they have zoomed in. To overcome such orientation problems, many desktop applications feature an additional overview window showing a miniature of the entire information space. Small devices, however, have a very limited screen real estate and incorporating an overview window often means pruning the size of the detail view considerably. Given this context, we conducted a user study in which 24 participants solved search tasks by using two zoomable scatterplot applications on a PDA - one of the applications featured an overview, the other relied solely on the detail view.

Büring, T.; Gerken, J; Reiterer, H.: Usability of Overview-Supported Zooming on Small Screens with regard to Individual Differences in Spatial Ability. In *Proceedings of Advanced Visual Interfaces (AVI)*, 2006.

Scalability of Scatterplot Visualizations on Small Screens



Little is known about the scalability of scatterplot visualizations on small screens. Current research prototypes are limited to handle a few hundred data objects at most. With regard to this, we developed a scatterplot visualization for PDAs that is suitable to display several thousand items and is enhanced by two alternative access strategies: a geometric-semantic zoomable user interface and a novel fisheye distortion technique. To investigate the effectiveness and usability of both interaction styles we conducted a usability study with 24 participants.

Buering, T.; Gerken, J.; Reiterer, H.: User Interaction with Scatterplots on Small Screens - A Comparative Evaluation of Geometric-Semantic Zoom and Fisheye Distortion. In *IEEE Transactions on Visualization and Computer Graphics* (Proceedings Visualization / Information Visualization 2006), 2006.

This work is supported by the DFG Research Training Group GK-1042 "Explorative Analysis and Visualization of large Information Spaces".