

Novel Uses for Tangible Displays above the Tabletop

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In these demonstrations, we present novel uses for tangible magic lenses, i.e., spatially aware lightweight displays that can be moved through the physical 3D space on or above a tabletop. In the first demo, we demonstrate the usefulness of tangible views to support interaction with information visualizations, such as graph, matrix, and space-time-cube visualizations as well as scatter and parallel coordinate plots. Tangible views facilitate making multiple – previously virtual – views physically “graspable”. In addition, by tracking the 3D movement of tangible views, we can control various visualization parameters with more degrees of freedom.

In the second demo, we showcase tangible user interface palettes (TUIP) by means of a simple graphics editor application written for a pen-supported tabletop environment. TUIPs provide a novel way of making traditional graphical user interfaces (GUI) tangible and thus more flexible. We demonstrate how users can arrange GUI palettes more easily by physically moving them on or above the table surface. Hereby, image content is dynamically projected onto paper-like mobile displays. Users can adjust palette sizes by physically un-/folding them. We also show how the height above the tabletop can be used for interaction, e.g., for browsing file content and navigating through image details.