

MagicMark: A marking menu using 2-D direction and 3-D depth information

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A recent study presents a novel marking menu, MagicMark, to extend the selection capability of large-screen interactions. By leveraging the 2-D directional information and 3-D depth information, MagicMark supports smooth freehand gestures to complete menu selection without any additional confirmation gesture. It can also provide seamless transition from a novice user to an expert user. Results of an experiment show that MagicMark can significantly improve user performance of command selection in large display interactive environment.

Menus are important interactive components of user interfaces, broadly applied to command exploration and selection. However, as one of the important input modalities, 3-D depth [information](#) has not been fully utilized for [menu](#) control in large displays.

To extend the selection capability of large screen interactions, researchers propose MagicMark, a novel marking menu combining 2-D direction and 3-D depth information. It allows users to make menu selection through two interactive techniques: depth-based main menu selection and direction-based submenu selection. In this way, MagicMark supports smooth freehand gesture to complete menu selection without any additional confirmation [gesture](#).

With 3-D depth inputs, MagicMark requires less display space than the other hierarchical menus. Besides, as a marking menu, MagicMark can provide seamless transition from a novice user to an expert user.

The results of an experiment show that MagicMark can significantly reduce the selection time comparing to the traditional linear menu without sacrificing accuracy. Researchers attribute this performance gain to the selection mechanism of the MagicMark. *Science China Information Sciences* reported this novel menu in the sixth issue of 2018.

More information: Fei Lyu et al, MagicMark: a marking menu using 2D direction and 3D depth information, *Science China Information Sciences* (2018). [DOI: 10.1007/s11432-018-9385-7](https://doi.org/10.1007/s11432-018-9385-7)

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