Abstract

The availability of mobile phones enhanced with different sensors increased the possibility of using the mobile devices in various applications in ubiquitous computing. Mobile phones can be used as interaction device with other devices such as large projected displays. In this paper we propose a design of a cell phone pointing interface based on its embedded accelerometer sensor for interaction with large projector based displays. The main idea is to use a simple hand gestures for pointing to a certain point, for object selection, for object movement or for drawing various forms on large display screen. Rigorous and systematic evaluation of the proposed interface has been conducted and its efficiency has been experimentally evaluated on various tasks. The results have shown that embedded accelerometer sensor in mobile phones in combination with a simple hand gestures are a promising approach for interaction with large display screen and that potential users see ease of use, intuitiveness and enjoyment as advantages of this interaction technique.
- Lee J. C., Hudson S. E., Tse E., Foldable Interactive Displays, Proceedings of the 21st annual ACM symposium on User interface software and technology, 2008
- Smartphone forecast by Pyramid Research, http://www.pyr.com/pr_prlist/PR121009_SMART. htm (Online, visited 10. 05. 2012)
- Hardy R., Rukzio E., Touch & interact: touch-based interaction of mobile phones with displays, MobileHCI &apos;08 Proceedings of the 10th international conference on Human computer interaction with mobile devices and services, P. 245-254, 2008
- Dachselt R., Buchholz R., Natural throw and tilt interaction between mobile phones and distant displays, CHI EA &apos;09 Proceedings of the 27th international conference extended abstracts on Human factors in computing systems, P. 3253-3258, 2009

**Index Terms**

Computer Science

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**Keywords**

Cell phone  Pointing interface  Projector based display  Evaluation methodology