Student Projects Involving Novel interaction with Large Displays

Abstract:

DETI-Interact is an interactive system that offers information relevant to students on large displays in the lobby of the University of Aveiro’s Department of Electronics, Telecommunications and Informatics (DETI). The project started in 2009 with a master’s thesis addressing interaction with public displays through Android smartphones. Since then, it has evolved considerably; it currently allows gesture interaction based on a Kinect sensor. Meanwhile, it has involved third-year students, master’s students, and undergraduate students participating in a research initiation program. The outcomes of this research will include (i) novel interaction techniques that enable a designer to effectively sketch, annotate, and navigate large-scale designs on the display wall using a separated small screen, (ii) empirical results showing the efficacy of the interactions, (iii) empirical results showing how much the display wall improves exploration and communication of early design ideas for interactive systems design relative to existing solutions, (iv) a better understanding of how the use of small and large screens can complement each other in the design process, (v) a functional implementation of our techniques that can be evaluated within the context of other domains such as architecture, industrial, and mechanical design, and (vi) a stronger collaboration among the PI, NCSA, and the School of Art and Design.
**Existing System:**

The Existing interfaces differ in the degree of complexity both because of degree of functionality or usability.

In Existing, displays are getting thicker and cost and are common in many public spaces: lobbies, shops, coffee houses, museums, and so on. However, these displays often just display information without any interaction.

**Disadvantage:**

- Users need an additional device to control screen content.
- These devices can be categorized by human senses.

**Proposed System:**

The problem of interaction with large displays in public spaces is currently of interest given the large number of displays available in such spaces (as lobbies, train stations, waiting rooms, etc.) that are only showing information with no possibility to interact with the contents. Several works have been developed in order to allow interaction with these displays using technologies such as infrared, Bluetooth, GPRS, digital compasses or touch screens. Some only intend to provide information, while others emphasize on capturing users’ attention eventually leading them to some action. This paper describes DETI-Interact, a system located in the entrance hall of a University department allowing users to interact with a large display without the need to carry any electronic device since a Kinect is used to capture different user’s gestures.

**Advantages:**

- DETI-Interact used information on a server about department faculty and course schedules, instead of static WebPages.
- This system enables users to interact with the contents displayed in a large screen in the lobby of the department through an Android mobile device.
System Requirements:

Hardware Requirements:

- System : Pentium IV 2.4 GHz.
- Hard Disk : 40 GB.
- Floppy Drive : 1.44 Mb.
- Monitor : 15 VGA Colour.
- Mouse : Logitech.
- Ram : 512 Mb.
- MOBILE : ANDROID

Software Requirements:

- Coding Language : Java 1.7
- Tool Kit : Android 4.2.2
- IDE : Eclipse Juno