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SurfNet—Technology of the Future—Today!

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Proxemic Interaction: Designing for a Proximity and Orientation-Aware Environment

By Till Ballendat, Nicolai Marquardt and Saul Greenberg

In the everyday world, much of what we do is dictated by how we interpret spatial relationships. This is called proxemics. What is surprising is how little spatial relationships are used in interaction design, i.e., in terms of mediating people's interactions with surrounding digital devices such as digital surfaces, mobile phones, and computers.

Our interest is in proxemic interaction, which imagines a world of devices that has fine-grained knowledge of nearby people and other devices - how they move into range, their precise distance, and even their orientation - and how such knowledge can be exploited to design interaction techniques. In particular, we show how we used proxemic information to regulate implicit and explicit interaction techniques. We also show how proxemic interactions can be triggered by continuous movement, or by movement in and out of discrete proxemic regions.

We illustrate these concepts with the design of an interactive vertical display surface that recognizes the proximity of surrounding people, digital devices, and non-digital artifacts - all in relation to the surface but also the surrounding environment.

Our example application is an interactive media player that implicitly reacts to the approach and orientation of people and their personal devices, and that tailors explicit interaction methods to fit.

To read the full article, go to http://www.nsercsurfnet.ca/pmwiki.php?n=SurfNet.Papers

In This Issue

Mark Your Calendars

Industry Open House
October 15th
University of Calgary

More details on page 2

A Software Development Kit to Simplify Multi-Touch Application Development and Testing

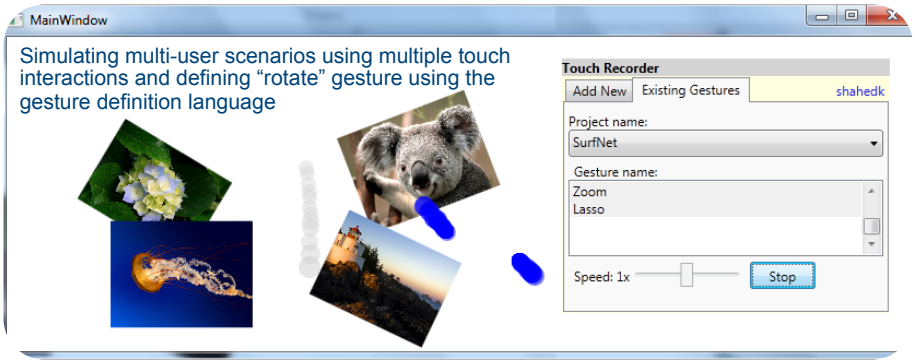
By Shahedul Huq Khandkar and Frank Maurer

In human computer interaction, touch has been considered an interaction medium for an extensive period of time. Until recently however, touch was basically treated as a mouse replacement. Recent innovations in multi-touch devices have initiated new opportunities for computer interaction that are fundamentally intuitive and natural. Innovative devices allow controlling applications with gestures based on multiple touch points and strokes. As multi-touch devices become increasingly affordable, it is essential to make developing touch and gesture-based applications more effective and efficient.

Currently, developers often use device specific software development kits to build multi-touch applications. This approach, however, couples the application tightly with a particular device and running it on another device sometimes requires significant work. We are developing a platform-independent toolkit, TouchToolkit, to simplify multi-touch application development and testing. The key features of this toolkit are:

- a domain-specific language to define custom gestures,
- tools to simulate touch interactions,
- a framework to write automated tests for gestures,
- consistent visual feedback across devices, and
- an extensibility framework to add new devices and features.

TouchToolkit is now publicly available and is being used in several application development projects with industrial partners. More information can be found at the website http://touchtoolkit.codeplex.com.




```
name: Rotate

validate
    Touch state: TouchMove and
    Touch limit: 2 and
    On same object and
    Distance between points: unchanged 10%

return
    Slope changed
```

Upcoming Event

For SurfNet contact information please go to:
www.nsercsurfnet.ca/pmwiki.php?n=SurfNet.Contact

SurfNet Industry Open House
University of Calgary | Rozsa Centre
October 15, 2010 | 7:45 AM - 12:00 PM

You are invited to attend the First Annual SurfNet Industry Open House. Please come and join us to see and discuss recent developments in the SurfNet Research Network.
Please refer to http://www.nsercsurfnet.ca/pmwiki.php?n=SurfNet.OpenHouse for updates to our agenda.

7:45 Continental Breakfast
8:30 Introduction and greetings by Ken Barker, Dean of the Faculty of Science
8:45 Keynote address by Dave Thomas of Bederra Research Labs
9:45 SurfNet overview by Frank Maurer, University of Calgary followed by:
- Theme 1: Humanizing the Digital Interface by Sheelagh Carpendale, University of Calgary
- Theme 2: Improving Software Time to Market by Robert Biddle, Carleton University and Kevin Schneider, University of Saskatchewan
- Theme 3: Building Infrastructure for Digital Surfaces by Nicholas Graham, Queen's University and Carl Gutwin, University of Saskatchewan

10:15 Break & Demos in the two labs on campus
12:00 End of Event

For a free ticket, RSVP by **September 24th** to grace.whitehead@ucalgary.ca with your full name and affiliation. Limited space is available.
A campus map can be found at: http://www.ucalgary.ca/map/.

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