January - March 2013

SurfNet

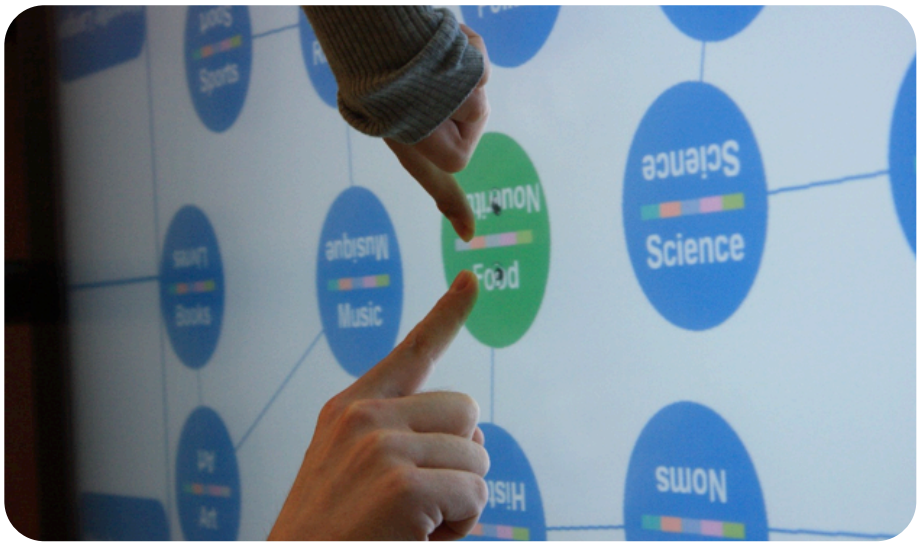
NSERC CRSNG

SurfNet—Technology of the Future—Today!

Vol 4, Issue 1

Multi-Touch Made Easy with the Simple Multi-Touch Toolkit

By Zachary Cook, Erik Paluka, Mark Hancock, and Christopher Collins



Multi-touch computing, with interactive surfaces of all sizes, is becoming increasingly ubiquitous. Therefore, growth in this area must be supported by preparing students to design interfaces and create software for multi-touch environments. Many existing toolkits, while powerful, require a strong programming background and are too difficult for non-CS students or for integration into fast-paced HCI courses. A toolkit with a simplified API, accessible to CS and non-CS majors alike, is needed. As a solution, researchers at the University of Ontario Institute of Technology and the University of Waterloo have developed the Simple Multi-Touch Toolkit (SMT).

Built as a library for the popular Processing platform, SMT simplifies prototyping multi-touch applications by integrating with Processing's simplified syntax and accessible graphics programming model. If the user is using a different platform, SMT can also be used as a standalone Java library. Based on the concept of touch-enabled zones, the toolkit provides a collection of pre-built zones, and supports the recognition of different multi-touch events and gestures. SMT natively supports TUIO but also works with Windows Touch as well as non-touch environments through the included 'touch-to-TUIO' bridge, and 'mouse-to-TUIO' emulator.

In addition to being used as a prototyping platform for design projects in undergraduate HCI courses at UOIT and Waterloo, SMT has been used by SurfNet researchers at both universities to develop several applications, from a prototype collaborative interface for Facebook to a tandem language learning system. The team is now inviting the wider SurfNet community to try the SMT toolkit and join in on the open source development.

The toolkit source, tutorials, examples, contact information, and documentation are available at: https://github.com/vialab/SMT.

In This Issue:

Save the dates - SurfNet 2013 Summer Workshop

Strip'TIC Augmented Paper Flight Strips for Air Traffic Control

By Cheryl Savery

During the fall of 2012, researchers from Queen's University and École Nationale de l'Aviation Civile (ENAC) in Toulouse France collaborated as part of the LEIF Transatlantic Exchange Program. The researchers were working on a prototype system called Strip'TIC for air traffic controllers.

Strip'TIC bridges the gap between the digital world and the world of paper flight strips that continue to be used in air traffic control centres in France and in many other parts of the world. Strip'TIC allows information entered onto flight strips to be recorded digitally while still allowing air traffic controllers to manipulate the strips in a physical manner. The system mixes augmented paper flight strips and digital pens with vision-based tracking and augmented rear and front projection. The collaboration involved extending the system to allow multi-touch input as well as input from digital pens.

Using the system, the team investigated the specific interactions involved in several tasks typically performed by air traffic controllers. For each task, they developed a variety of possible interaction techniques combining multi-touch, Anoto digital pens, and physical manipulation of paper flight strips. The interactions were evaluated by air traffic controllers during participatory design sessions and modifications were made based on their feedback.

A video demonstration of Strip'TIC is available here: http://www.youtube.com/watch?v=G9bXJUup3BU

Workshop 2013:

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

- The SurfNet Summer 2013 Workshop will be held at the University of Calgary from June 12 - June 15, 2013
- The workshop will be 3 (+1) days, with the following tentative schedule:
- Tuesday, June 12th - 2 MITACS workshops (entrepreneurship and tech writing) and demo setup for Open House
- Wednesday, June 13th - Internal SurfNet workshop; keynote speech by Pierre Boulanger (U of A) and Industry Open House
- Friday, June 14th - SurfNet Advisory Board Meeting and tutorials/workshops presented by students
- Saturday, June 15th - SurfNet networking tour and Strategic Planning Workshop (by invitation only; tentative focus - ICT support for natural resource exploration, extraction, management, and monitoring)
- Watch the website for further details!

SurfNet
www.nsercsurfnet.ca