

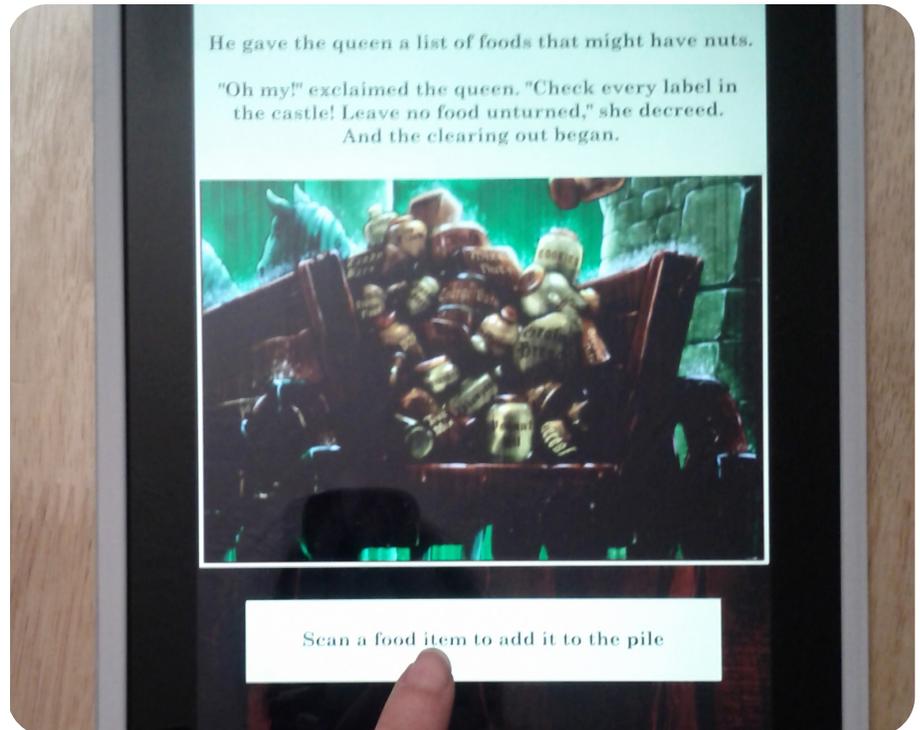
## Narrative Training Makes Mastery of New Technologies Easier

By Rebecca Langer, Amber West, Mark Hancock, Stacey Scott, and Neil Randall

Narrative can be a highly effective means of communicating new information. A good story provides meaning and engagement, presenting each piece of new information in a concrete, emotionally-charged context that makes the information easier to understand, easier to remember, and – in many cases – increases the listener's motivation to continue with the story to find out what happens next.

Researchers at TouchLab at the University of Waterloo are currently building software that uses narrative to help users master interaction with new technologies more rapidly and more thoroughly. Together, the interactive software and the user collaborate to create a story in which the user's avatar grows stronger as the user learns how to use software and hardware to achieve goals, such as defeating the story's villain by solving a problem the software is designed to solve.

Specifically, the lab is creating an



alternate, game-like version of the MyFoodFacts app for iOS that uses a fairy tale story to help users understand the process of scanning and analyzing food products for dangerous allergens. We want to know whether a narrative-based interface can make an unusual

application more intuitive to new users, easier to understand and master, and/or more motivating than a more traditional interface. The program is currently in the prototyping phase, but we hope to start running user studies soon.

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SurfNet  
at the Midpoint:  
A Look at What We've  
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## KinectArms: Rich Arm Embodiments for Tabletop Groupware

By Aaron Genest

Gestures are an integral part of much of human communication. Gesture-based or -enhanced communication is especially obvious when people talk about shared artifacts, such as maps. When people use tabletop displays, they use similar kinds of gestures, especially pointing, to establish context. However, when we interact in distributed settings, there are several problems. First, extracting arm images from video is often computationally expensive. Second, the height of a gesture is difficult to capture and challenging to represent. Finally, making the arm embodiment visible and understandable at the remote table remains an open research problem.

Researchers at the Universities of Saskatchewan and Calgary have developed a new two-part toolkit, called KinectArms, that quickly and easily captures and displays arm embodiments. KinectTable uses a depth camera to segment the video and determine gesture height and uses



image recognition techniques to identify hands, fingers, and arms. KinectViz provides visual effects for representing arms, showing gesture height, and enhancing visibility in distributed settings. It also replicates many of the major remote embodiment techniques for showing arms and hands in distributed settings and provides simple programmatic hooks for adding new techniques. Thus, KinectArms supports both communication over distributed tables and interactive tabletop appli-

cations that use over-the-surface gestures as part of the interaction library.

KinectArms lets designers add rich arm embodiments to their systems without undue cost or development effort, improving the expressiveness and usability of distributed tabletop groupware. It is available at: <https://github.com/aarongenest> and is currently in use at several universities and colleges around the world.

### Halfway There:

- As of the midpoint of SurfNet's 5-year mandate, there have been 176 Ph.D., M.Sc., and undergraduate interns involved in SurfNet-related projects (versus 140 originally planned for the full duration of SurfNet), with 28 positions fully funded by SurfNet
- There are 16 network collaborators actively involved in SurfNet, and SurfNet researchers have or are currently collaborating with 16 industry partners
- There are currently 40 application projects in various stages of completion; 6 offspring projects have been developed with different partners
- SurfNet has generated one spinoff company
- There has been extensive collaboration across Focus Areas and subthemes, as well as between the various SurfNet labs across Canada, with Themes 1 (Humanizing the Digital Interface) and 3 (Building Infrastructure for Digital Surfaces) being particularly heavily cross-pollinated

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