1
Tattio allows users to create
their own on-skin technology
designs.

10 DEMO HOUR

14 WHAT ARE YOU READING?

16 HOW WAS IT MADE?

18 DAY IN THE LAB

Interactivity is a unique forum of the ACM CHI conference that showcases more than 50 cutting-edge demonstrations and inspirational interactive installations from the diverse group of researchers, designers, and artists that make up the CHI community. These works were chosen to engage audiences intellectually, imaginatively, and physically to create a critical discourse for the future of HCI.

Julie R. Williamson, Amanda M. Williams, Sean White, and Cesar Torres, CHI 2016 Interactivity Chairs

DEMO
HOUR

1. Tattio

Tattio is a fabrication process that draws from current body-decoration processes (e.g., jewelry-like metallic temporary tattoos) for the creation of on-skin technology. The fabrication process generates functional components such as NFC tags, circuitry, and thermochromic tattoos, while maintaining the aesthetics and user experience of existing metallic temporary tattoos. The fabrication process is low cost, accessible, and customizable; we seek to enable individuals to design, make, and wear their own skin-technology creations.

<https://vimeo.com/cindykao/tattio>

Kao, H.-L. C., Johns, P., Roseway, A., and Czerwinski, M., Tattio: Fabrication of aesthetic and functional temporary tattoos. *Proc. of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems*. ACM, New York, 2016, 3699–3702..

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IMU data is used to orient graphics on the device toward the user to provide the illusion of 3D-motion parallax.

2. MagicWand

MagicWand is a handheld cylindrical display object. It features two flexible OLED screens that provide a continuous display surface covering most of its lateral area. Its shape and size allow it to be used as a wand, offering rich gestural interaction. We used **MagicWand** in a gaming scenario to explore how its form factor affords different actions from those of a traditional smartphone. As a game controller, **MagicWand** can display different tools and characters, depending on the context. Its physical and visual affordances make it easier for the player to discover the right

gestures for advancing through the game.

➤ <http://www.dropbox.com/s/rvly3jvvfg2scoc/MagicWand.mp4?dl=0>

➤ Priyadarshana, L-L., Porter, V., Carrascal, J-P., Visser, A., Vertegaal, R. **MagicWand: Exploring physical affordances with a handheld cylindrical display object.** *Proc. of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems*. ACM, New York, 2016, 3762–3765.

Lahiru Lakmal Priyadarshana, Victoria Porter, Juan Pablo Carrascal,

3

A cradle that rocks and charges your device.

Aaron Visser, and Roel Vertegaal, Human Media Lab, Queen's University
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3. Maintaining Relationships with Our Devices

Despite the current strong commercial trend toward wearable technology, this performance considers the role that *unworn* personal devices have played in our lives. The performance explores the distance we have had between our bodies and our devices and

proposes that this distance has given us the space to form meaningful relationships. The parent-child metaphor used within the performance suggests the design of mobile devices and accessories that maintain and enhance our relationships with our devices.

➤ <http://sarahhomewood.com/ixd/MaintainingRelationships.html>

➤ <https://vimeo.com/159113631>

➤ Homewood, S. **Maintaining relationships with our devices.** *Proc. of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems*. ACM, New York, 2016, 273–276.

3
Screen maintenance
is self-maintenance.

4
The final score being sewn
onto the quilt machine
version of Threadsteading.
One player's symbol is the
spiral, the other's a flower.

4
A closeup of the game
being played on the
embroidery machine.

Sarah Homewood, Malmö
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4. Thread- steading

Threadsteading is a two-player territorial control game for quilting and embroidery machines. The game is played entirely on the machine, with input via a custom-mounted controller and output as a tangible, sewn artifact. Gameplay is turn-based and designed around the unique constraints of

the platform and craft. Because quilting requires unbroken paths of thread, each turn must pick up where the previous turn left off. The rules encourage players to have an even spread of lines across the surface, since ideally a quilt has neither large unsewn portions nor multiple stitched lines on top of each other.

→ <https://www.disneyresearch.com/project/threadsteading/>
Albaugh, L., Grow, A., Liu, C., McCann, J., Mankoff, J., and Smith, G. Threadsteading: Playful interaction for textile fabrication devices. *Proc. of the 2016 CHI*

Conference Extended Abstracts on Human Factors in Computing Systems. ACM, New York, 2016, 285–288.

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**Gameplay is
designed around
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