

Content Delivery for Tomorrow: From Vibrotactile Notifications to Mid-Air Displays

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<https://www.youtube.com/channel/UC-KqoJ77ZfWhGPN4IILJbmQ>



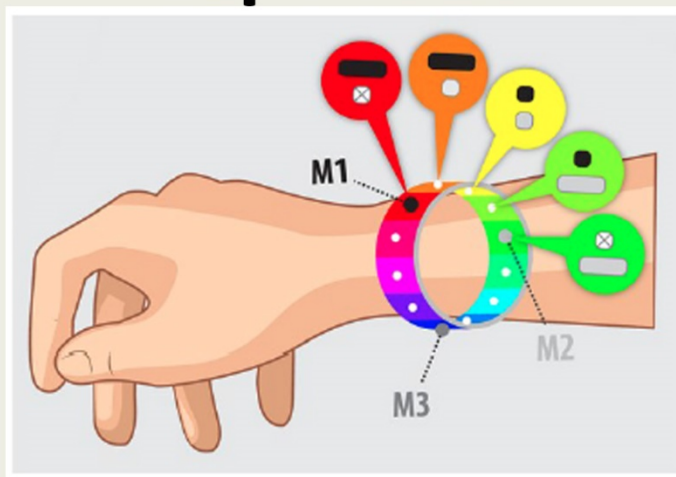
Friday, February 10, 2017, from 10:15

Room 30201, 3rd floor, Høyteknologisenteret (data blokk)

Abstract

Vibrotactile notifications can be supportive as our visual attention is often overtaxed, both in mobile and fixed settings. In the first part of this talk, we investigate how users perceive spatiotemporal vibrotactile patterns on the arm, palm, thigh, and waist. Results of the first two experiments indicate that precise recognition of either position or orientation is difficult across multiple body parts. Nonetheless, users were able to distinguish whether two vibration pulses were from the same location when played in quick succession. Based on this finding, we designed eight spatiotemporal vibrotactile patterns and evaluated them in two additional experiments. In the second part of this talk, we present HaptiColor, an assistive wristband that encodes discrete color information into spatiotemporal vibrations to support colorblind users to recognize and compare colors (picture). In the third part of this talk, we speculate around how advances in display technologies could soon make wearable mid-air displays—devices that present dynamic images floating in mid-air relative to a mobile user—available.

HaptiColor



Related papers:

Jessalyn Alvina, Shengdong Zhao, Simon T. Perrault, Maryam Azh, Thijs Roumen, and Morten Fjeld. 2015. OmniVib: Towards Cross-body Spatiotemporal Vibrotactile Notifications for Mobile Phones. DOI: <http://dx.doi.org/10.1145/2702123.2702341>

Marta G. Carcedo, Soon Hau Chua, Simon Perrault, Paweł Wozniak, Raj Joshi, Mohammad Obaid, Morten Fjeld, and Shengdong Zhao. 2016. HaptiColor: Interpolating Color Information as Haptic Feedback to Assist the Colorblind. DOI: <http://dx.doi.org/10.1145/2858036.2858220>

Alexandru Dancu, Mickaël Fourgeaud, Mohammad Obaid, Morten Fjeld, and Niklas Elmquist. 2015. Map Navigation Using a Wearable Mid-air Display. DOI: <http://dx.doi.org/10.1145/2785830.2785876>