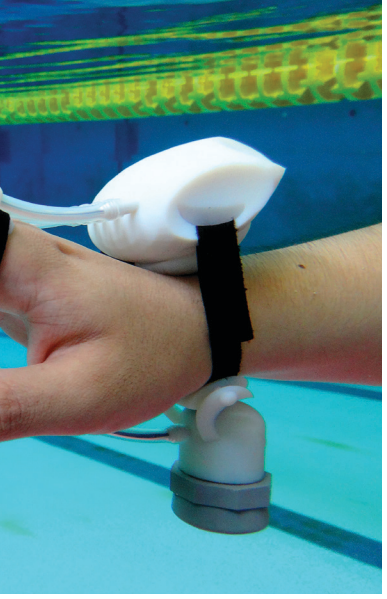
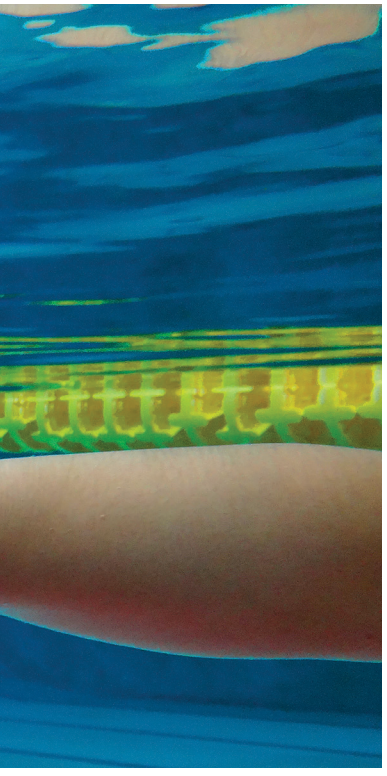
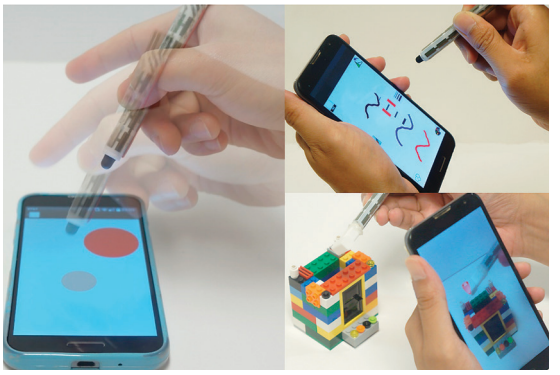
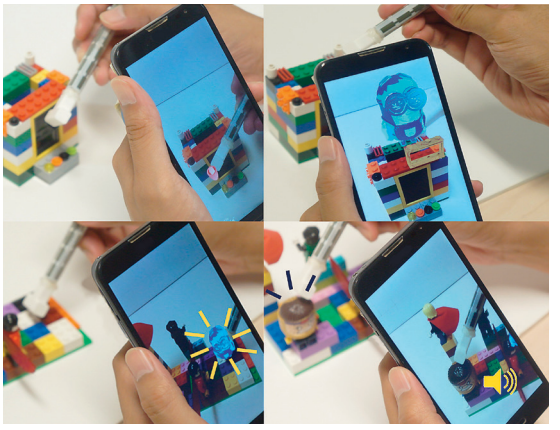


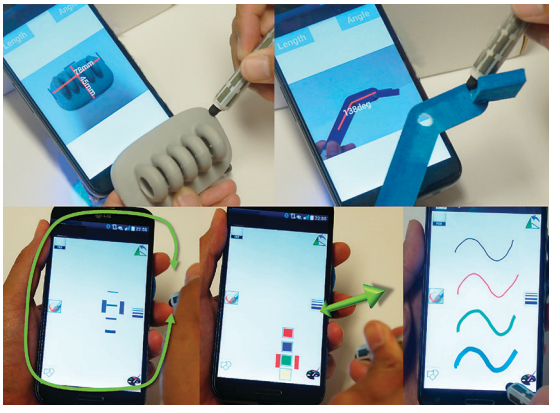




4
TMotion enables real-time 3D position tracking with an existing mobile device. It supports both discrete and continuous interactions in expanded interaction volume.



A mobile AR environment is a good fit for utilizing 3D mobile interaction behind the device.



Spatial tangible interaction and mid-air menu control provide above-the-device interaction capability with 3D mobile input.

http://aisencaro.com/iruka.html
https://youtu.be/RDm-yDW1qxw
Chacin, A.C., Oozu, T., and Iwata, H. IrukaTact: Submersible haptic search glove. *Proc. of the 10th International Conference on Tangible, Embedded, and Embodied Interaction.* ACM, New York, 2016, 392–397.

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4. TMotion

TMotion is a self-contained 3D input device that enables spatial interactions around a mobile device using an enhanced magnetic-sensing technique. Moving the stylus around the mobile device produces continuous 3D position tracking data in real time. Example applications that highlight TMotion's interaction capabilities include spatial tangible measurement, mid-air menu control, and mobile AR input. As 3D mobile interfaces develop, there is an increasing need for better methods to handle and exploit richer user inputs. We envision that a real-time 3D mobile input device like TMotion will fulfill these requirements.

https://engineering.purdue.edu/cdesign/wp/tmotion-embedded-3d-mobile-input-using-magnetic-sensing-technique/
https://www.youtube.com/watch?v=pWuq5H5kyAg
Yoon, S-H. Huo, K., and Ramani, K. TMotion: Embedded 3D mobile input using magnetic sensing technique. *Proc. of the 10th International Conference on Tangible, Embedded, and Embodied Interaction* ACM, New York, 2016, 21–29.

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