

In the future, we plan to investigate sequences of multiple single-button interactions as advanced shortcuts. We further plan to explore PUCSBLs as personalized shortcuts for additional systems (e.g., smart lights).

Acknowledgements

We thank Jan Riemann, Jens Heuschkel, Fabian Czappa, Alexander Geiss, Sarah Hainzl, and Robin Fromm-Smoydzin for their valuable assistance.

REFERENCES

1. Till Ballendat, Nicolai Marquardt, and Saul Greenberg. 2010. Proxemic interaction: designing for a proximity and orientation-aware environment. In *In Proc. ITS '10*. ACM Press, New York, New York, USA, 121. DOI : <http://dx.doi.org/10.1145/1936652.1936676>
2. Michael Beigl. 1999. Point & Click-Interaction in Smart Environments. Springer, Berlin, Heidelberg, 311–313. DOI : http://dx.doi.org/10.1007/3-540-48157-5_31
3. A.J. Bernheim Brush, Bongshin Lee, Ratul Mahajan, Sharad Agarwal, Stefan Saroiu, and Colin Dixon. 2011. Home automation in the wild: challenges and opportunities. In *In Proc. CHI '11*. ACM Press, New York, New York, USA, 2115. DOI : <http://dx.doi.org/10.1145/1978942.1979249>
4. H.-W. Gellersen, A. Schmidt, and M. Beigl. 2000. Adding some smartness to devices and everyday things. In *In Proc. HotMobile '00*. IEEE Comput. Soc. DOI : <http://dx.doi.org/10.1109/MCSA.2000.895376>
5. Hiroshi Ishii and Brygg Ullmer. 1997. Tangible bits: towards seamless interfaces between people, bits and atoms. In *In Proc. CHI '97*. ACM Press, New York, New York, USA, 234–241. DOI : <http://dx.doi.org/10.1145/258549.258715>
6. Astrid Twenebowa Larssen. 2004. Physical Computing. Springer, Berlin, Heidelberg, 661–665. DOI : http://dx.doi.org/10.1007/978-3-540-27795-8_74
7. David Ledo, Saul Greenberg, Nicolai Marquardt, and Sebastian Boring. 2015. Proxemic-Aware Controls: Designing Remote Controls for Ubiquitous Computing Ecologies. In *In Proc. MobileHCI '15*. ACM Press, New York, New York, USA, 187–198. DOI : <http://dx.doi.org/10.1145/2785830.2785871>
8. Thomas Martin. 2008. The role of design in wearable computing. In *In Proc. ISWC '08*. IEEE, 128–128. DOI : <http://dx.doi.org/10.1109/ISWC.2008.4911608>
9. Joanna McGrenere. 2000. "Bloat": The Objective and Subjective Dimensions. In *In Proc. CHI '00*. ACM Press, New York, New York, USA, 337. DOI : <http://dx.doi.org/10.1145/633292.633495>
10. Albrecht Schmidt. 2000. Implicit human computer interaction through context. *Personal Technologies* 4, 2-3 (jun 2000), 191–199. DOI : <http://dx.doi.org/10.1007/BF01324126>
11. D. Schreiber, K. Luyten, M. Mühlhäuser, O. Brdiczka, and M. Hartman. 2013. Introduction to the special issue on interaction with smart objects. *ACM Transactions on Interactive Intelligent Systems* 3, 2 (jul 2013), 1–4. DOI : <http://dx.doi.org/10.1145/2499474.2499475>
12. Tatsuo Nakajima. 2005. Personalization Framework in a Personal Coordination Server: A System Infrastructure for Designing Pleasurable Experience. In *In Proc. ICES'05*. IEEE, 392–399. DOI : <http://dx.doi.org/10.1109/ICES.2005.74>
13. C.W. Thompson. 2005. Smart Devices and Soft Controllers. *IEEE Internet Computing* 9, 1 (jan 2005), 82–85. DOI : <http://dx.doi.org/10.1109/MIC.2005.22>