Computational Projection Displays

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Projection displays have been applied in many fields including not only presentation scenarios but also projection mapping events. Because projectors are generally designed to project images onto a planar and uniformly white surface, they are not suitable to display images on non-planar and textured surfaces on which the image quality of the projected result is much degraded. We have been tackling this issue by applying the computational projection displays approach to realize "ubiquitous projection" environment where any surfaces in our daily space become a seamless cyber-physical interface. In this talk, I introduce our recent research activities in this research field (see [1] and Fig. 1).
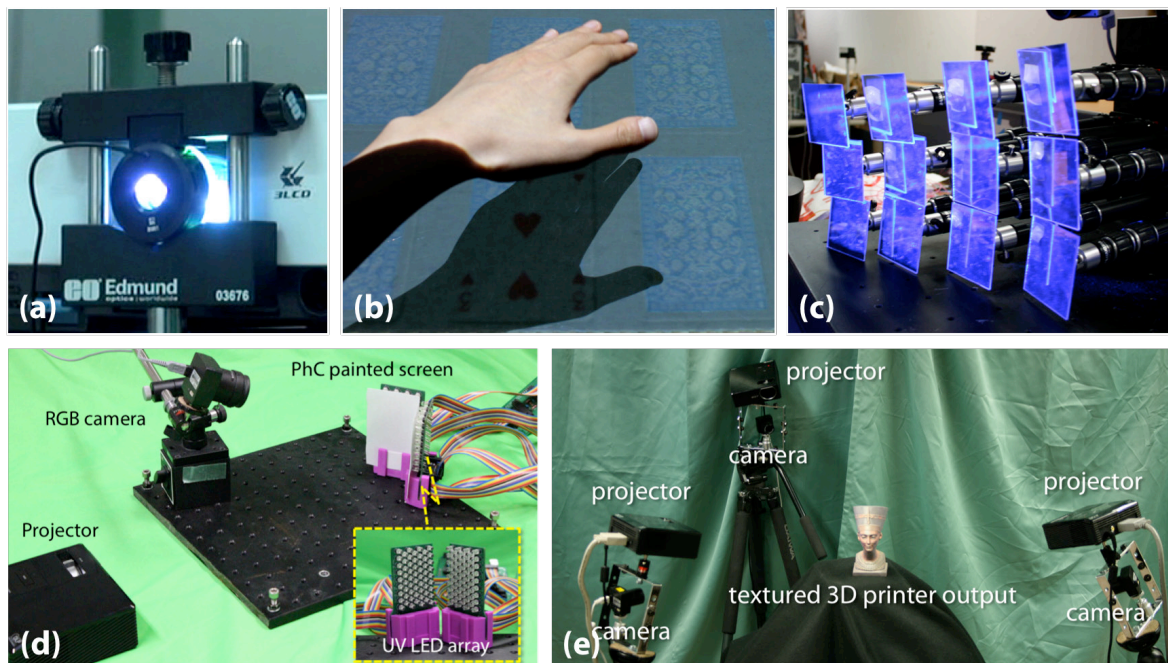

Figure 1. Examples: (a) focus sweep projection [5], (b) graphical shadow [4], (c) virtual multi-projection for shadow removal [2], (d) HDR projection by reflectance modulation [6], and (e) 3D HDR projection [3].

Reference

[1] http://www.sens.sys.es.osaka-u.ac.jp/users/iwai/

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[4] M Isogawa et al., IEEE TVCG, 20(9): 1293-1302 (2014).

[5] D Iwai et al., IEEE TVCG, 21(4): 462-470 (2015).

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