# Computational Projection Display for AR/VR

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Projection displays have been applied in augmented reality (AR) and virtual reality (VR) systems. In AR/VR applications, images are projected onto non-planar and textured surfaces. Because projectors are generally designed to project images onto a planar and uniformly white surface, they are not suitable to display images on such unsuitable 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 for AR and VR applications. In this talk, I introduce our recent research activities in this research field (see [1] and Fig. 1).
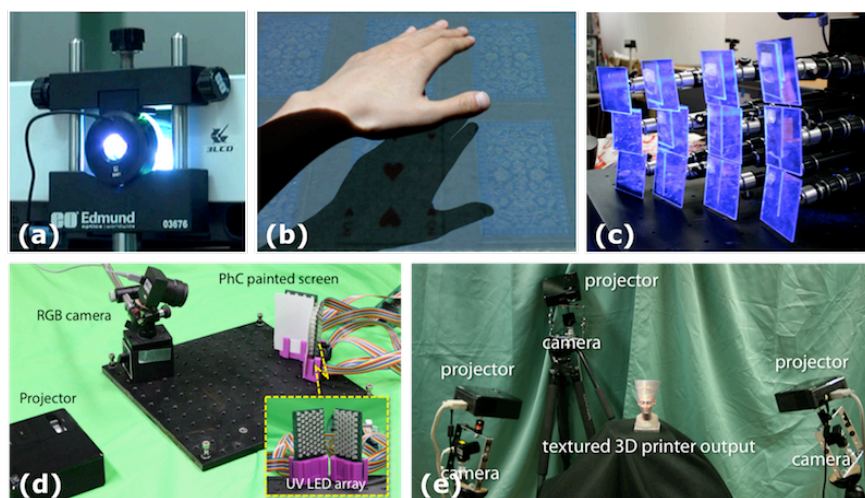
Fig. 1 Examples: (a) focus sweep projection [2], (b) graphical shadow [3][4], (c) virtual multi-projection for shadow removal [5], (d) HDR projection by reflectance modulation [6], and (e) 3D HDR projection [7].

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