

Designing Interactive Experiences with Computer Systems that Understand Users' Body Movement and Gestures

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ABSTRACT

A variety of computer systems and devices, from the prevalent smartphones and tablets to the newest smartwatches and smartglasses to large public interactive displays and surfaces, is available for users to access information and computing resources on the go, at any time, and from virtually any place. Despite the heterogeneity of these devices in terms of type, size, form factor, platform, operating system, etc., many afford natural interaction modalities, such as input based on body movement and gestures. In this talk, I will present results obtained in the Machine Intelligence and Information Visualization Research Laboratory (<http://www.eed.usv.ro/mintviz>) regarding designs of gesture-based interaction for wearable devices, large displays, touchscreens and interactive surfaces, augmented and mixed reality systems, smart television, and other application areas. Examples include gestures enabled by a wearable system designed for the finger and hand that makes users believe they are actually holding and manipulating digital content, gesture commands for controlling a smart TV that replace remote controls, and body-referenced gestures used to interact with digital content found in physical pockets on the user's clothes. I will also discuss the flexibility, versatility, expressivity, and other qualities of body movement and gestures as a natural input modality for interactive computer systems.