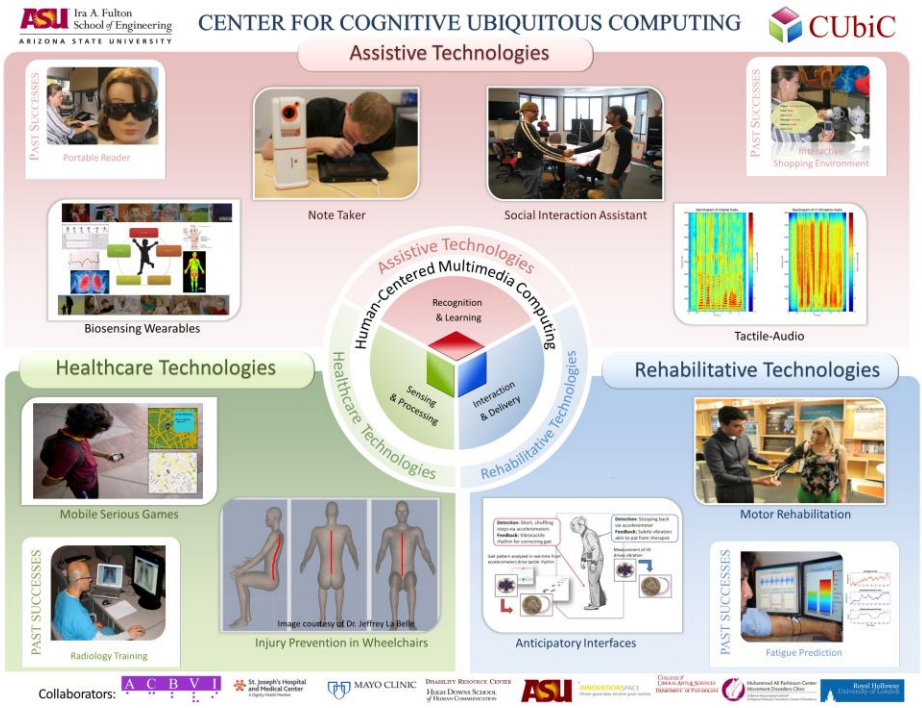
CENTER FOR COGNITIVE UBIQUITOUS COMPUTING



The Center for Cognitive Ubiquitous Computing (CUbiC) at Arizona State University is an interdisciplinary research center focused on cutting edge research in human-centered multimedia computing across application areas of assistive, rehabilitative and healthcare technologies. Our research spans three main areas of multimedia computing: sensing and processing, recognition and learning, interaction and delivery. These research areas have led us to make fundamental contributions in signal processing, computer vision, pattern recognition, machine learning, human-computer interaction and haptics. Two interdisciplinary projects in the area of rehabilitative technologies are currently available for student collaboration: ***Autonomous Training Assistant (ATA):*** At-home exercise is critical to success in rehabilitation, but without trainer presence, motor learning becomes difficult, leading to reduced compliance. ATA utilizes multimodal real-time feedback and serious games to guide motor activity. This project is aimed at developing an at-home training platform that links game performance to health outcomes. ***Exercise Compliance:*** During rehabilitation, it is often dangerous for individuals to exercise without a trained professional due to the risk of injury. We are exploring approaches to anticipate and alert when an individual's body becomes non-compliant to prevent injury. This project is aimed at identifying physiological cues that predict non-compliant behavior.

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