Design and Evaluation of an Automated Coaching System for Elderly Population

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Background and Motivation

• Positive effects of exercise on the well-being and quality of independent living for older adults are well-accepted.
• Many elderly individuals, however, lack access to exercise facilities, or the skills and motivation to perform exercise at home.
• To address these issues, we developed an automated interactive exercise coaching system geared towards elderly users based on the Microsoft Kinect camera.

New System Design

• Re-design of user interface (UI) that features high contrast and visibility.
• Reduction of information presented on each screen.
• Richer selection of exercises, grouped by targeted body parts and difficulty level.
• In-exercise feedback includes silhouette and skeleton captured by the Kinect.

Pilot Study

• We deployed initial coaching system into homes of six independently-living elderly individuals.
• We examined issues related to the in-home system setup, user tracking, feedback, and exercise performance evaluation to guide the design of the next version of the coaching system.

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References