

Serious games for physical rehabilitation: designing highly configurable and adaptable games

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ABSTRACT

Computer games have been recognized as a motivational tool in rehabilitation for a decade. Traditional rehabilitation includes exercises which are often considered as repetitive, boring and requires supervision by the therapist. New opportunities in rehabilitation have risen with the emerging popularity of computer games and novel input sensors like 3D cameras, balance boards or accelerometers. Despite active research in this area, there is still lack of available games for rehabilitation mainly due to many different requirements that have to be met for each type of therapy. In this paper we propose a specialized configurable architecture for revalidation games, focusing on neuro-muscular rehabilitation. The proposed architecture enables a therapist to define game controls depending on the patient needs and without any programming skills. We have also implemented a system meeting this architecture and four games using the system in order to verify correctness and functionality of the proposed architecture.

Full papers will be published in the Conference Proceedings and will be available to delegates at the conference on Sept. 10.

Full papers will be released on-line in the ICDVRAT archive on March 15.