

## عنوان مقاله:

Adaptation of Avatar Upper Limb with Patient's Capabilities in Rehabilitation Serious Games

## محل انتشار:

ششمین کنفرانس بین‌المللی بازی‌های رایانه‌ای، فرصت‌ها و چالش‌ها (سال: 1399)

تعداد صفحات اصل مقاله: 6

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## خلاصه مقاله:

Recently, several studies have explored the feasibility of serious games for physical rehabilitation. Serious games use the element of entertainment to promote other purposes such as learning or treatment. In this article, a serious game-based method for upper extremity rehabilitation is being introduced. The method is adapted to the patient's condition and flexibility, using fuzzy logic. Unlike other games that apply adaptation to the features and scenario of the game, in our method, the adaptation is applied to the patient's avatar. The game scenario consists of a preparatory phase in which the maximum amount of joint flexibility and error relative to the desired flexibility is measured. Then, by these data, the fuzzy normality was calculated and the amount of help delivered to the patient at different stages of the game was determined. To validate the game, the accuracy of measuring the range of motion of the patient's hand was considered through different angle measurement techniques and the results were compared with the standard goniometry method. In addition, the efficiency of the method was validated by occupational therapy experts through a questionnaire.

## کلمات کلیدی:

Adaptation; Avatar; Serious Game; Rehabilitation; Stroke; Upper Limbs

## لینک ثابت مقاله در پایگاه سیویلیکا:

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