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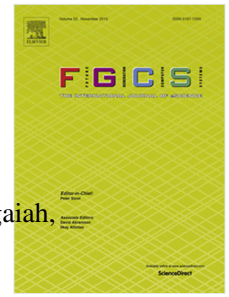

Fuzzy adaptive cognitive stimulation therapy generation for Alzheimer's sufferers: Towards a pervasive dementia care monitoring platform

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Fuzzy Adaptive Cognitive Stimulation Therapy Generation for Alzheimer's Sufferers: Towards a Pervasive Dementia Care Monitoring Platform

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Abstract

In this paper, we present a novel system for cognitive stimulation therapy to progressively assess cognitive impairment and emotional well-being of dementia patients in social care settings. The system assesses patients interactions and computes performance scores for different areas of cognitive stimulation. Patient interactions are initially classified into predefined performance categories through clustering of a sampled population. New personalised stimulation plans tailored to match the patient's changing level of impairment are generated automatically through a set of fuzzy rule based systems using quantitative attributes and the overall scores of patients interactions. Therapists can redefine, evaluate and adjust the rules governing difficulty and activity levels for different stimulation areas to fine tune generated activity plans. The system can also be combined with an Internet of Things (IoT) enabled patient dialogue system for determining the affective state of participants during therapy sessions that could be used as a pervasive condition monitoring platform. Experiments consisting of therapy sessions of patients interacting with the

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