



AUGMENTED REALITY GAME BASED MULTI-USAGE REHABILITATION THERAPIST FOR STROKE PATIENTS

N.I. De Leon, S.K. Bhatt, Adel Al-Jumaily

School of Electrical, Mechanical and Mechatronics Systems, Faculty of Engineering
University of Technology, Sydney, PO Box 123 2007

Broadway NSW, Australia

Emails: Neil.I.DeLeon@student.uts.edu.au, Smit.Bhatt@student.uts.edu.au,
Adel.Al-Jumaily@uts.edu.au

Submitted: May 4, 2014

Accepted: July 1, 2014

Published: Sep. 1, 2014

Abstract- For the surviving stroke patients that are affected physically and mentally, they are required rehabilitation after the stroke. Rehabilitation can be quite expensive on the patient and their families. The augmented reality rehabilitation gaming system aims to decrease the dependency on supervised therapy. This paper presents two augmented reality games. The games focus on rehabilitating stroke patients affected with upper limb disabilities. The games simulate current physical therapy techniques in an interactive augmented environment. The benefits of using a gaming platform are to provide the user with increased motivation, as well as a cost effective rehabilitation solution. The games can be used with or without a hand held roller-ball device, which can change the movement and focus of the exercise.

Index terms: Augmented Reality (AR), Stroke Rehabilitation, Virtual Reality, Upper Extremity, Mixed Reality.

