A Workshop Proposal

Title: International Workshop on Assistive and Rehabilitative Technology and Applications

Workshop length: half-day

List of presenters: Professor Honghai Liu, UK; Professor Naoyuki Kubota, Japan; Professor Hata Yukata, Japan; Professor Xiangyang Zhu, China; Professor Guanglin Li, China; Professor Kevin Warwick, UK; Professor Palm Rainer, Sweden; Professor Altheofer Kaspar, UK; Professor Bram Vanderborght, Belgium.

Brief (one sentence) statement of the workshop goal: This workshop is to provide a technical forum to exchange and advance state of the art in assistive technologies and its applications.

Brief (one paragraph) synopsis of the workshop content: the half-day workshop will be divided into two sections: one section is for paper submissions for major topics in assistive technologies and applications, the other section is for a human hand gesture recognition competition, datasets will be provided by intelligent systems and biomedical robotics group in Portsmouth University. The first session is to attract more research interest on assistive technologies and to enhance exchange of ideas among experts in this area. It is a computational challenge to recognize human hand skills and further transfer them to artificial hands or to assist human hand such as the paretic hand of stroke patients. This competition of the second session offers an international forum forming researchers and practitioners to a joint force to attack this problem and explore its potential in a spectrum of applications including immersive game technology, prostheses and healthcare applications. Comprehensive experiments have conducted to collect multi-modal datasets for this competition including force, EMG, position and haptic sensory information. The datasets for the competition covers all the sensory information as much as possible aiming to provide a internationally acceptable database for attacking the challenge of human hand recognition and transfer. It is expected that attention will be attracted and solutions and applications to this challenge would be appeared in very near future.

Outline of major topics: Accessible technology, Adaptive devices or equipment, Assistive devices and technology, Communication aids, Independent living aids, Mobility aids, Prosthetics, Rehabilitation robotics, Wheelchairs, Medical rehabilitative aids and devices and Rehabilitative engineering.