



## PROGRAMME

| <b>Thursday, October 13, 2016</b> |  |
|-----------------------------------|--|
| 08:30 – 09:30                     | Welcome Desk/ Registration                                     |
| 09:30 - 10:00                     | C1 - Workshop Opening/Presentation                             |
| 10:00 - 11:00                     | <b>C2 - Keynote speaker – Sue Cobb</b>                         |
| 11:00 - 11:30                     | Coffee break   |
| 11.30 – 12.45                     | <b>Session 1 - Track Motor Rehabilitation Assessment</b>       |
| 12.45 – 14.45                     | Lunch Break  |
| 14:45 - 16:00                     | <b>Session 2 - Track Cognition Assessment</b>                  |
| 16:00 - 16:30                     | Coffee break   |
| 16:30 - 18:00                     | <b>Session 3 - Track Motor Rehabilitation</b>                  |
| 19:30 -                           | Social event   |
| <b>Friday, October 14, 2016</b>   |  |
| 9:15 -9:45                        | Registration   |
| 09:45 - 11:30                     | <b>Session 4 - Track Interactive Rehabilitation Systems I</b>  |
| 11:00 – 11:30                     | Coffee break   |
| 11:30 – 12:45                     | <b>Session 5 - Track Interactive Rehabilitation Systems II</b> |
| 12:45 – 14:45                     | Lunch break  |
| 14:45- 16:00                      | <b>Session 6 - Serious Games for Rehabilitation</b>            |
| 16:00-16:15                       | C3 - Conference Closing  |

## C1 - Opening of REHAB 2015 Workshop

**Date:** Thursday 13th October 2016, 9:30 - 10:00h.

**Room:** Auditorium Agostinho da Silva

**Members:** Inês Jongenelen, Habib M. Fardoun, Pedro Gamito, Victor M.R. Penichet

## C2 - Plenary Conference: Keynote

**Date:** Thursday 13th October 2016, 10:00 - 11:00h.

**Room:** Auditorium Agostinho da Silva

**Author:** Sue Cobb. University of Nottingham

**Short Bio:** Sue Cobb, PhD is Associate Professor and Head of the Human Factors Research Group in the Faculty of Engineering at the University of Nottingham and has been working in this group for 30 years. Her research interest is in multi-disciplinary research for development of new applications of 3D interactive technology and use of user centred and participatory design methods in a variety of contexts including special education and healthcare. She has worked on several projects involving analysis of user requirements and user feedback on new applications of virtual reality and associated technologies. Examples include: The Virtual City: VR program to support daily life skills training for young people with special educational needs (1998), AS Interactive (VR programme to support communication skills in young people with autism (2003), MYUI: Adaptive design of technology for accessibility for elderly people (2009), I-BiT™: Interactive Binocular Treatment system for treatment of amblyopia (2010), COSPATIAL: VR activities to encourage collaboration and social communication in young people with autism (2012). Sue has been an active member of the International Conference on Disability, Virtual Reality and Associated Technologies (ICDVRAT) research community since 1996 and held the position of President of the International Society for Virtual Rehabilitation (ISVR) 2012-2015

## Session 1. Track Motor Rehabilitation Assessment

**Date:** Thursday 13th October 2016, 11:30 - 12:45h.

**Room:** Auditorium Agostinho da Silva

**Chair:** Pedro Rosa

*Using the i-Walker as a measurement tool for walking behaviour analysis*

Atia Cortés

*Three-dimensional functional evaluation of the shoulder complex using the Kinect™ sensor*

Bruno Bonnechère, Victor Sholukha, Lubos Omelina, Bart Jansen and Serge Van Sint Jan

*Dynamic balance assessment of aged patients using serious games*

Bruno Bonnechère, Victor Sholukha, Lubos Omelina, Mélissa Van Vooren, Bart Jansen and Serge Van Sint Jan

*Validation of trunk kinematics analysis through serious games rehabilitation exercises using the Kinect™ sensor*

Bruno Bonnechère, Victor Sholukha, Lubos Omelina, Bart Jansen and Serge Van Sint Jan

*Inertial Sensors for Assessment of Joint Angles*

Susana Carneiro, Joana Silva, João Madureira, Dinis Moreira, Vânia Guimarães and Inês Sousa

## Session 2: Track Cognition Assessment

**Date:** Thursday 13th October 2016, 14:45 - 16:00h.

**Room:** Auditorium Agostinho da Silva

**Chair:** Rodrigo Brito

*Evaluation of cognitive functions of aged patients using video games*

Bruno Bonnechère, Christophe Fabris, Jean-Christophe Bier, Serge Van Sint Jan, Véronique Feipel and Bart Jansen

*Assessing Usability Testing for People with Dementia*

Aideen Gibson, Claire McCauley, Maurice Mulvenna, Assumpta Ryan, Liz Laird, Kevin Curran, Brendan Bunting, Finola Ferry and Raymond Bond

*Ecologically-oriented approach for cognitive assessment in the elderly*

Jorge Oliveira, Pedro Gamito, Beatriz Rosa, Dina Bértolo, Jéssica Ribeiro, Tatiana Sousa, Diogo Morais, Fernando Ferreira and Paulo Lopes

*Computer-assisted assessment of cognitive functioning in the elderly through the Systemic Lisbon Battery*

Paulo Lopes, Pedro Gamito, Jorge Oliveira, Cátia Coelho, Catarina Alves, Nuno Santos, Tatiana Sousa, Diogo Morais and Rodrigo Brito

*Design of a set Serious mini-games as support in cognitive rehabilitation for Children with Auditory Impairment*

Sandra Cano, Cesar Collazos, Habib Fardaun and Daniyal M. Alghazzawi

### **Session 3: Track Motor Rehabilitation**

**Date:** Thursday 13th October 2016, 16:30 – 18:00h.

**Room:** Auditorium Agostinho da Silva

**Chair:** Diogo Morais

*Precise hand movement telerehabilitation with virtual cubes for patients with Parkinson's disease*

Imre Cikajlo, Dejana Zajc, Irena Dolinšek, Tatjana Krizmanič, Alma Dekić, Mateja Vesel and Karmen Peterlin Potisk

*Simulation of Generic Body Weight Support Systems Effects for Assisted Walking*

Nicholas de Boer, Hamid Abdi, Michael Fielding, Saeid Nahavandi and Laxmidhar Behera

*LINarm++: an affordable and advanced linear device for arm rehabilitation*

Matteo Malosio, Matjaz Mihelj, Andrea Crema, Carlo Seneci, Marco Caimmi, Tito Dinon, Lorenzo Molinari Tosatti, Alessio Prini, Alessandro Scano, Giulio Spagnuolo, Janez Podobnik and Michele Cotti Cottini

*Virtual gait analysis tool to test lower limb prosthesis*

Daniele Regazzoni, Andrea Vitali, Giorgio Colombo and Caterina Rizzi

*Virtual Fine Rehabilitation in Patients with Carpal Tunnel syndrome using low-cost devices*

Sergio Albiol-Pérez, Javier Mena-Cajas, Ivón-Patricia Escobar-Anchaguano, Edwin-Patricio Pruna-Panchi and Paulina Zumbana

*Continuous Estimation of Hand's Joint Angles from sEMG using Wavelet-based Features and SVR*

Rami Alazrai, Deena Alabed, Nasim Alnuman and Ala Khalifeh

### **Session 4: Track Interactive Rehabilitation Systems I**

**Date:** Friday 14th October 2016, 09:45 - 11:30h.

**Room:** Auditorium Agostinho da Silva

**Chair:** Habib Fardoun

*Usability of interfaces designed with a user-centered design methods for control JACO arm*

Sauzin Damien, Vella Frédéric and Vigouroux Nadine

*From Analog to Digital: Computerized Application of Toulouse-Piéron*  
Pedro Joel Rosa, Paulo Lopes, Jorge Oliveira, Inês Ambrósio and Rute Silva

*Embodied rehabilitation: When Lokomat supported walking treatment and virtual reality spatial cognition meet*

Francesca Morganti, Paola Sabattini and Roberto Casale

*Exploring 3D scenes for neurorehabilitation*

Daniel Vargas Herrera, Ivette Caldelas, Fernando Brambila-Paz and Rodrigo Montufar-Chaveznava

*Review of systems to train psychomotor skills in hearing impaired children*

Victor M. Peñeñory, Cristina Manresa-Yee, Inmaculada Riquelme, Cesar A. Collazos and Habib M. Fardoun

## **Session 5: Track Interactive Rehabilitation Systems II**

**Date:** Friday 14th October 2016, 11:30 - 12:45h.

**Room:** Auditorium Agostinho da Silva

**Chair:** Victor M. R. Penichet

*Immersive virtual reality platform for Cerebral Palsy rehabilitation*

Emilia Biffi, Cristina Maghini, Alessia Caterina Marelli, Eleonora Diella, Daniele Panzeri, Ambra Cesareo, Chiara Gagliardi, Gianluigi Reni and Anna Carla Turconi

*Giok: an alien stimulates pragmatic and social skills in pre-school children*

Maria Luisa Lorusso, Marisa Giorgetti, Simona Travellini, Luca Greci, Andrea Zangiacomi, Marta Mondellini, Marco Sacco and Gianluigi Reni

*3D Editor to Define Generic Rehabilitation Therapies as a Source to Monitor and Guide Patients*

José Antonio Fernández Valls, Juan Enrique Garrido Navarro, Alberto Mora Plata, Victor M. R. Penichet and Maria-Dolores Lozano

*An Open Source Cloud Based Platform for Elderly Health Monitoring and Fall Detection*

Ala' Khalifeh

*The effect number of pages on reading depth: insights for a better informed consent in neurorehabilitation*

Pedro Rosa, Jorge Oliveira, Dalila Ferreira, Carina Crespo, Miria Sousa, Paulo Lopes and Patrícia Pascoal

## **Session 6: Serious Games for Rehabilitation**

**Date:** Friday 14th October 2016, 14:45 - 16:00h.

**Room:** Auditorium Agostinho da Silva

**Chair:** Juan Enrique Garrido

*Analyzing the quality of experience of computer games in rehabilitation: the therapist's perspective*

Lubos Omelina, Bruno Bonnechère, Serge Van Sint-Jan and Bart Jansen

*Games For Rehabilitation Of Subjects With Disabilities: A Survey*

Barbara Leporini and Marion Hersh

*The Effect of Serious Games In Cognitive Stimulation: A Meta-analysis Study*

Pedro Rosa, Carla Sousa, Bruno Faustino, Fernando Feiteira, Jorge Oliveira, Paulo Lopes, Pedro Gamito and Diogo Morais

*Ubiquitous Gamification Framework for Stroke Rehabilitation Treatment based on the Web Service*

Inho Jung, Joongsup Lee, Jaehyo Kim and Changbeom Choi

*Enhancing phonological awareness in Children with Dyslexia*

Pablo Torres-Carrion, Carina Soledad González-González, Jaime-Edwin Basurto-Ortiz and Silvia Libertad Vaca-Gallegos

### **C3 - Closing of REHAB 2016 Workshop**

**Date:** Friday 14th October 2016, 16:00 - 16:15h.

**Room:** Auditorium Agostinho da Silva

**Members:** Habib M. Fardoun, Pedro Gamito, Victor M.R. Penichet, Juan Enrique Garrido