Virtual Reality and Motor Disorders

Multiple Virtual Reality applications emerged in the field of motor disorders, with objectives of assessment and rehabilitation. The purpose of the Symposium is to propose a wide range of works carried out to examine different facets of the question, and also to develop national and international collaborations related to this theme.

Program

8:45 Welcome

9:00 Introduction
Evelyne Klinger, Scientific Chair of the Symposium

9:05 Introduction to Virtual Reality
Evelyne Klinger and Philippe Fuchs, ENSMP, Paris

9:30 Keynote Lecture: Virtual Rehabilitation for Motor Impairment: First Principles and Bottom Lines
Tamar Weiss, LIRT, Haifa, Israel

10:30 Coffee break

Session 1: Motor Imagery
Chaired by Bernard Bussel, Poincaré, Garches, and Evelyne Klinger

10:45 A virtual reality System for mental practice in post-stroke rehabilitation
Jose Antonio Lozano, Mediclab, Valencia, Spain

11:10 Improving motor recovery in paralysed patients with illusory visual feedback of correct movements
Pascal Giraux, UPRES EA 3062, St Etienne

11:35 Addressing psychological aspects of motor disorders with virtual reality technologies
Feryel Znaïdi, CNRS UMR 7593, Paris

12:00 Poster: A virtual reality based simulator project to train wheelchair navigation, I. Randria, STIC, University, Toulon

12:15 Questions

12:30 Lunch

Session 2: Proprioception
Chaired by Agnès Roby-Brami, CNRS UMR 8119, Paris and Rose-Marie Marié, UPRES EA 3917, Caen

14:00 Physics fidelity and perceptual realism of virtual reality in motor rehabilitation
Minhua Ma, University of Ulster, GB

14:25 Kinehaptique : a robotic system for rehabilitation of the upper limb
Christine Mégard, CEA/LIST, France

14:50 Playbox: A Flexible Haptic and Virtual Framework for All
Brian R. Duffy, SMARTlab, London, UK

15:15 Coffee break

Session 3: Locomotion
Chaired by Pascal Giraux, UPRES EA 3062, St Etienne and Daniel Mestre, CNRS UMR 6152, Marseille

15:30 Steering behavior induced by different optic flows during walking
Guillaume Sarre, CRIR, McGill University, Canada

15:55 Virtual reality as a tool for the development of a smart wheelchair
Daniel Mestre, CNRS UMR 6152, Marseille

16:20 HandiSpace: Virtual reality and humanoid agents as an aid for design and evaluation of architecture settings for physical disabled people
Alexis Nédelec, LISyC, Brest

16:45 General discussion

17:30 End of the Symposium