Scientific/Educational Workshop

Workshop title
Application of current findings from virtual reality research to clinical intervention

Workshop organizer
Patrice L. (Tamar) Weiss (University of Haifa)

Speakers
Phillippe Archambault,
Emily A. Keshner,
Mindy F. Levin,
Patrice L.. (Tamar) Weiss

Workshop goals
To review the strengths and weaknesses of the current treatment approaches with a focus on how the experimental results in virtual reality studies may:
(1) be used to modify current clinical interventions;
(2) support new clinical approaches and
(3) support the use of virtual reality as a clinical or diagnostic tool.

Abstract
Each presenter will present data from studies using virtual reality (VR) technology with specific identification about the clinical hypotheses underlying the performance of this study. Strengths and weaknesses of the current treatment approaches will be identified and discussed with a focus on how the experimental results: (1) could be used to modify current clinical interventions; (2) could support new clinical approaches and (3) directly support the use of virtual reality as a clinical or diagnostic tool. Topics from four areas of Vr-based clinical research will be used to illustrate this approach. Dr. Phillippe Archambault from McGill University will present results from studies on VR applications for wheelchair mobility to address how they can support assessment and training of wheelchair driving skills. Dr. Emily A. Keshner from Temple University will present results from studies on the parameters of optic flow that influence sub-cortical control mechanisms to address sensory reweighting as an intervention for improving balance control in dynamic environments. Dr. Mindy F. Levin from McGill University will present results from virtual reality applications to improve upper limb impairment and activity to illustrate how therapists can manipulate motor learning principles for motor recovery using VR applications. Dr. Patrice L. (Tamar) Weiss from the University of Haifa will present results from personalization of motion capture-based virtual gaming platforms to address issues related to motor and cognitive intervention for children with cerebral palsy and adults who are post-stroke. During the last 20-30 min, participants will have an opportunity to try out "hands-on" demos to experience some virtual reality technologies that can be applied in clinical environments.