

VIRTUAL REHABILITATION 2009

University of Haifa
June 29 – July 2, 2009
<http://www.virtual-rehab.org/2009/>

Monday, June 29th

Education and Science Building, Rooms 566 and 570

- 9:30-12:30** **WORKSHOP A:** Low Cost Virtual Reality Systems in Physical Rehabilitation. *R Brown, A Burstin*
WORKSHOP B: Virtual Humans for Virtual Rehabilitation. *N Magnenat-Thalmann, D Thalmann*
- 12:30-13:30** **LUNCH – Conference Registration Opens**
- 13:30-16:30** **WORKSHOP C:** Integrating Virtual Reality into Clinical Practice. *B Lange, S Flynn, J Wilken*
WORKSHOP D: Virtual Reality and Brain Imaging Technologies. *S Slobounov*

Tuesday, June 30th

Main Building, Hecht Auditorium

- 8:00-17:30** **Conference Registration Open**
- 9:00 - 9:10** **Opening Remarks** T Weiss, E Keshner
- 9:10-10:30** **PLATFORM SESSION I: PSYCHOLOGICAL AND NEUROPSYCHOLOGICAL IMPACT**
 Chairs: N Katz, M Safir
- The impact of personality traits on the experience of presence. R Samana, H Wallach, M Safir
- Development and clinical results from the virtual IRAQ exposure therapy application for PTSD. AA Rizzo, G Reger, B Newman, K Holloway, B Rothbaum, J Difede Weill, G Gahm, T Parsons, R McLay, S Johnston, K Graap, J Spitalnick, P Bordnick
- How do telerehabilitation technologies change clinical practice and interprofessional communication? A qualitative case-study (S) D Kairy, L Pascale, V Claude
- Eleven months of home telerehabilitation with virtual reality videogames - lessons learned M Golomb, B Rabin, Mo Barkat-Masih, M Abdelbaky, M Huber, G Burdea
- 10:30-11:00** **Refreshment Break**
- 11:00-12:20** **PLATFORM SESSION II: SPATIAL NAVIGATION**
 Chairs: E Klinger, J Fung
- Blind children navigation through gaming and associated brain plasticity. J Sanchez, A Tadres, L Merabet, A Pascual-Leone
- Integrate the BlindAid system in a traditional orientation and mobility rehabilitation program. O Lahav, D Schloerb, M Srinivasan
- PlayCubes: Monitoring constructional ability in children using a tangible user interface and a playful virtual environment (S). S Jacoby, G Gutwillig, D Jacoby, N Josman, PL Weiss, E Sharlin, M Koike, Y Itoh, N Kawai and Y Kitamura
- Feasibility of using an immersive driving simulator for rehabilitation: A pilot study. R Kizony, B Mazer, A Nota, V Rubin
- 12:20-13:30** **LUNCH**
- 13:30-14:30** **Keynote Speaker** Dr. Grigore (Greg) Burdea
 Rubber Ball to Cloud Rehabilitation© - Musing on the Future of Therapy
 Chair AA Rizzo

Tuesday, June 30th (con't)

14:30-15:30 POSTER SESSION I

14:30-15:00 Presenters Available

Self Management of Stroke Supported By Assistive Technology. N Nasr, S Mawson, P Wright, G Mountain

Visual Feedback for Mixed Reality Stroke Rehabilitation.(S) N Lehrer, L Olson

Yes Wii Can! Using digital games as a rehabilitation platform after stroke – The role of social support.

W van den Hoogen, W IJsselsteijn, Y de Kort

Nintendo Wii remote and Nunchuck as a wireless data subsystem for digital acquisition of analog physiologic data relevant to motor rehabilitation after stroke; part II. (S) M Matamoros, M Negrete, R Leder

Computer game environment for assessment of self-initiated behavior and measurement of its neural correlates using fMRI. S Preminger, T Harmelech, O Laufer, S Gilai-Dotan, A Arieli, R Malach

15:00-15:30 Presenters Available

Virtual environments for the study of the effect of context on dual tasking. R Kizony, O Elion, Y Bahat, I Siev-Ner, J Fung, N Katz

A new perspective for virtual mirror therapy. (S) M Pälmeke, T Schüler, H von Piekartz, K Morisse

Probing the behavioral and physiological correlates underlying projection of the body via 3D virtual haptic environments as a basis for developing novel therapeutic interventions. (S) L Raz, PL Weiss, M Reiner

Virtual reality methodology for pruritus and pain. F Magora, V Leibovici, S Cohen

15:00-15:30 Refreshments available

15:30-16:50 PLATFORM SESSION III: DEVELOPMENTAL DISABILITY

Chairs: A Merians, J Sanchez

A new virtual environment paradigm for high functioning autism intended to help attentional disengagement in a social context. O Grynszpan, J Nadel, N Carbonell, J Simonin, J Constant, F Le Barillier, JC Martin

Virtual reality in rehabilitation of attention deficit / hyperactivity disorder. (S) R Anton, D Opris, A Dobrean, D David, AA Rizzo

e-Empowerment of young adults with special needs. (S) C-N Shpigelman, PL Weiss, S Reiter

Lessons learned towards a best practices model of virtual reality intervention for individuals with intellectual and developmental disability. M Lotan, S Yalon-Chamovitz, PL Weiss

17:00-21:30 WELCOME BANQUET/CRUISE on the SEA OF GALILEE (tickets are required)

WEDNESDAY, JULY 1ST

Main Building, Hecht Auditorium

8:00-17:30 Conference Registration Open

9:10-10:00 PLATFORM SESSION IV: Short Paper Presentations

Chairs: N Josman, O. Even-Zohar

Ethnicity/gender and sense of presence in a virtual environment. I Almog, H Wallach, M Safir

VirHab - A virtual reality system for treatment of chronic pain and disability. U Feintuch, Z Meiner, M Tuchner, A Lorber-Haddad, S Shiri

PREVIRNEC: A telerehabilitation system for neuropsychological disorders. D Tost, M Ferré, P García, J-M Tormos, T Roig, A García

Breath: A game to motivate the compliance of postoperative breathing exercises. B Lang, S Flynn, M Silverman, A Huerta, M Bolas

Wednesday, July 1st (con't)
10:00-11:00 Keynote Speaker Professor Mordechai Shani

The Impact of Technology on Health Care: A Global Perspective

Chair: W Greenleaf

11:00-11:30 Refreshment Break
11:30-12:30 PLATFORM SESSION V: MODELS FOR ASSESSMENT AND RECOVERY

Chairs: P Sharkey, M Levin

Modeling the dynamics of the recovery process in robot therapy. M Casadio, P Morasso, V Novakovic, V Sanguineti

Using virtual reality to assess neck pain. (S) H Sarig-Bahat, PL Weiss, Y Laufer

Proximodistal gradient in the perception of delayed stiffness. (S) I Nisky, A Karniel

12:30-13:30 LUNCH (ISVR Board Meeting)
13:00-16:00 EXHIBITOR PRESENTATIONS - Sponsored by MOTEK BV www.motekmedical.com
14:00-16:00 POSTER SESSION II
15:00-15:30 Refreshments available
14:00-14:30 Presenters Available

The role of the physical embodiment of a music therapist robot for individuals with cognitive impairments: Longitudinal study. A Tapus

Collaborative Puzzle Game. Fostering collaboration in children with Autistic Spectrum Disorder (ASD) and with typical development. (S) A Battocchi, F Pianesi, P Venuti, A Ben-Sasson, E Gal, PL Weiss

Issues in the design of a virtual instrumental Activity of Daily Living (VIADL) for executive functions exploration.

X Cao, A-S Douquet, P Fuchs, E Klinger

Vital Mind: An interactive set-top box platform for cognitive training applications. A Miotto, J Lessiter

14:30-15:00 Presenters Available

Simulation as part of rehabilitation. S Ilnai, Y Munz, A Ziv, G. Zeilig

Construct validity of the VAP-S -Comparison between healthy controls and 3 clinical populations. N Josman, E Klinger, R Kizony

Reo assessment to guide the REOGO therapy: Reliability and validity of novel robotic scores. O Einav, D Yoeli, S Faran, S van Kaick, M Kerzhner, G Magnzi, K-H Mauritz

Implementation of the Multiple Errand Test in a NeuroVR-supermarket. (S) S Raspelli, L Carelli, F Morganti, PL Weiss, R Kizony, N Katz

Gait training using virtual reality and real-time feedback in a person with a transfemoral amputation B Darter, J Wilken, M Brawner, E Sinitski

15:00-15:30 Presenters Available

Application of virtual reality in postural stability rehabilitation. L Czerwosz, J Blaszczyk, M Mraz, M Curzytek

Games-based biofeedback training - Applications in rehabilitation and fall prevention. (S) E Heiden, Y Lajoie, A Nativ

Real-time feedback signal represents the underlying coordination mode of sit-to-stand. (S) E Heiden, T Cluff, B Richardson, R Balasubramaniam

Influence of optic flow on a sit-to-stand task in healthy children and adults. (S) J Slaboda, E Keshner

Wednesday, July 1st (con't)
15:30-16:00 Presenters Available

The Meal-Maker: A functional virtual environment for children with cerebral palsy. (S) S Kirshner, S Blum, PL Weiss, E Tirosh

Virtual reality as adjunctive therapy for upper limb rehabilitation in cerebral palsy. R Guberek, S Schneiberg, H Sveistrup, P McKinley, M Levin, F Cosentino

Upper limb rehabilitation using augmented feedback. E Carmeli, S Peleg, G Bartur, E Elbo, J-J Vatine

The Rutgers Arm II Rehabilitation System. A case series. D Cioi, G Burdea, M Holenski

Evaluation of a system for real-time analysis of muscle function: shoulder and elbow muscles. AJ van den Bogert, T Geijtenbeek, O Even Zohar

An overview of a USC Rehabilitation Engineering Research Center: The use of virtual reality for a range of motor impairments. S Flynn, B Lange, A Rizzo, P Requejo, F Valero-Cuervas, L Baker, C Winstein

16:15-17:00 PANEL DISCUSSION: Facilitating Multidisciplinary Research for Rehabilitation

E Keshner, moderator with panel members D Chen, W Greenleaf, M Levin, I Siev-Ner

17:00-18:00 ISVR BUSINESS MEETING - all conference attendees welcome

18:00-21:00 RECEPTION sponsored by the Mayor of Haifa followed by a complementary tour of the city of Haifa (ALL ARE WELCOME)

THURSDAY, JULY 2ND

Main Building, Hecht Auditorium

8:00-15:00 Conference Registration Open
9:00-9:45 Keynote Speaker Professor Sheizaf Rafaeli

Personal Computing to Communal Communication: Virtual Communities and the Net

Chair: PL Weiss

9:45-10:45 PLATFORM SESSION VI: Short Paper Presentations

Chairs: U Feintuch, S Mawson

Use of the Wii Fit System for the treatment of balance problems in the elderly: A case report. H Sugarman, A Burstin, A Weisel-Eichler, R Brown

Wii-based compared to standard of care balance and mobility rehabilitation for two individuals post-stroke. J Deutsch, D Robbins, J Morrison, P Guarrera-Bowlby

Virtual reality task for telerehabilitation dynamic balance training in stroke subjects. I Cikajlo, M Rudolf, N Goljar, Z Matjačić

Virtual reality enhanced rehabilitation for a service member with bilateral lower extremity amputations: A case study. S Kruger, J Bell, B Schnell

Real-time movement biofeedback for walking gait modification in knee osteoarthritis. T Wrigley, M Simic, M Hunt, R Hinman, K Bennell

10:45-11:15 Refreshment Break
11:15-12:55 PLATFORM SESSION VII: BALANCE and GAIT REHABILITATION

Chairs: J Deutsch, S Adamovich

No transfer of gains after a single training session within a virtual environment to fundamental tests of stability. (S) O Elion, Y Bahat, I Sela, I Siev-Ner, PL Weiss, A Karni

Postural behaviors to combined disturbances of the visual field and base of support. E Keshner, J Slaboda

Gait improvement in patients with cerebral palsy by visual and auditory feedback. Y Baram, R Lenger

Virtual reality and gait rehabilitation - Augmented feedback for the Lokomat. (S) L Zimmerli, A Duschau-Wicke, A Mayr, R Riener, L Lünenburger

Development of a force-sensing cane instrumented within a treadmill-based virtual reality locomotor system. (S) C Perez, A Oates, L Hughey, J Fung

Thursday, July 2nd (con't)

12:55-14:00 LUNCH (*VR2009 steering committee meeting*)

14:00-16:00 PLATFORM SESSION VIII: UPPER EXTREMITY REHABILITATION AND ROBOTICS

Chairs: D Liebermann, V Sanguineti

Emotion-Aware System for upper extremity rehabilitation. M Mihelj, D Novak, M Munih

Manual motor control during "virtual" self-motion: Implications for VR rehabilitation. WG Wright, E Schneider

Upper limb and grasp rehabilitation and evaluation of stroke patients using HenRiE device. J Podobnik, M Munih, M Mihelj

Kinematic features of arm and trunk movements in stroke patients and age-matched healthy controls during reaching in virtual and physical environments. DG Liebermann, S Berman, HP Weingarden, MF Levin, PL Weiss

Robotically facilitated training of the hemiparetic upper extremity as an integrated functional unit in virtual environments. A Merians, G Fluet, Q Qiu, S Adamovich

Robot-assisted virtual rehabilitation (NJIT-RAVR) system for children with upper extremity hemiplegia. G Fluet, Q Qiu, S Saleh, D Ramirez, S Adamovich, D Kelly, H Parikh

16:00-16:30 Refreshment Break (*awards committee meets*)

16:30-17:00 CLOSING CEREMONY WITH AWARD PRESENTATIONS