

2011 International Conference on Virtual Rehabilitation

(ICVR 2011)

**Zurich, Switzerland
27 – 29 June 2011**



IEEE Catalog Number: CFP1155A-PRT
ISBN: 978-1-61284-475-6

TABLE OF CONTENTS

Program Booklet	1
<i>N/a</i>	

PAPERS

Comparison of Powered Wheelchair Driving Performance in a Real and in a Simulated Environment	109
<i>P. Archambault, F. Routhier, P. Boissy, J. F. Chong, G. Sorrento</i>	
An Investigation of User Acceptance and Flow Experience using Video-Capture Gaming Technology for Exercise	116
<i>G. Barry, P. Van Schaik, A. Macsween, J. Dixon, D. Martin</i>	
Playing the Goblin Post Office Game Improves Movement Control of the Core A Case Study	118
<i>G. Barton, M. B. Hawken, R. J. Foster, G. Holmes, P. B. Butler</i>	
Optic Flow in a Virtual Environment Can Impact on Locomotor Steering Post Stroke	123
<i>J. Berard, J. Fung, A. Lamontagne</i>	
Exploring the Synergies of A Hybrid BCI VR Neurorehabilitation System	128
<i>S. Bermdez, H. Samaha, A. G. Morgade, P. F. M. J. Verschure</i>	
Axis of Visual Field Rotation and Order of Presentation Differentially Affect Postural Responses in a Virtual Environment	136
<i>R. Buddhharaju, L. Lanaria, E. A. Keshner</i>	
Emotive, Cognitive and Motor Rehabilitation Post Severe Traumatic Brain Injury	140
<i>G. Burdea, B. Rabin, A. Chaperon, J. Hundal</i>	
Perceptual and Navigational Strategies for Obstacle Circumvention in a Virtual Environment	148
<i>A. Darekar, G. Aravind, A. Lamontagne, J. Fung</i>	
The Effects of Visual Feedback in Therapeutic Exergaming on Motor Task Accuracy	153
<i>J. Doyle, D. Kelly, M. Patterson, B. Caulfield</i>	
Using 3D for Rebalancing the Visual System of Amblyopic Children	158
<i>A. Gargantini, M. Bana, F. Fabiani</i>	
Describing the Attention Deficit Profile of Children with Neurofibromatosis Type 1 using a Virtual Classroom Environment	165
<i>Y. Gilboa, S. Rosenblum, A. Fattal-Valevski, H. Toledane-Alhadeif, A. Rizzo, N. Josman</i>	
Validation of the Elements Re-Action System for use with Children Evaluation of Performance Across Developmental Stages	170
<i>D. Green, P. H. Wilson</i>	
Remote Hearing Screening as Part of Auditory Telerehabilitation a Preliminary Report	177
<i>A. Hemakom, A. Noymai, P. Israsena, S. Boonyanukul, C. Chinnarat</i>	
Effectiveness of Executive Functions Training Within a Virtual Supermarket for Adults with Traumatic Brain Injury	182
<i>M. Jacoby, S. Averbuch, Y. Sachar, N. Katz, P. L. Weiss, R. Kizony</i>	
Development of an Interactive Artifact for Cognitive Rehabilitation Based on Augmented Reality	189
<i>C. Kirner, T. G. Kirner</i>	
Development of Virtual Environments for Patient Centered Rehabilitation	196
<i>S. T. Koenig, A. Dinsler, C. Bartneck, J. C. Dalrymple-Alford, G. P. Crucian</i>	
Virtual Environment Support Orientation Skills of Newly Blind	203
<i>O. Lahav, D. W. Schloerb, M. A. Srinivasa</i>	
Dynamic Gaze Measurement with Adaptive Response Technology in Virtual Reality Based Social Communication for Autism	210
<i>U. Lahiri, Z. Warren, N. Sarker</i>	
Biotrak A Comprehensive Overview	218
<i>R. Lloms, J.-A. Gil-Gomez, P. Mesa-Gresa, M. Alcaniz, C. Colomer, E. Noe</i>	
Influence of Moving Visual Surroundings on Walking	224
<i>A. Mert, L. Hak</i>	
Treadmill Training with Virtual Reality to Decrease Risk of Falls in Idiopathic Fallers A Pilot Study	228
<i>A. Mirelman, M. Dorffman, M. Brozgul, J. M. Hausdorff</i>	
The Effect of Differing Optic Flow on Steering Behaviours During Goal-Oriented Locomotion	232
<i>A. G. Popov, A. Lamontagne</i>	

Neurorehabilitation of Poststroke Cognitive Impairments with the use of Computed Programs	236
<i>S. V. Prokopenko, E. Y. Mozheyko, T. D. Koryagina, M. M. Petrova, D. S. Kaskaeva, T. V. Chernykh, E. M. Arakchaa</i>	
Integrative Motor, Emotive and Cognitive Therapy for Elderly Patients Chronic Post-Stroke	241
<i>B. Rabin, G. Burdea, J. Hundal, D. Roll, F. Damiani</i>	
Chronic Pain Rehabilitation with a Serious Game using Multimodal Input	249
<i>C. Schnauer, T. Pintaric, H. Kaufmann, S. Jansen-Kosterink, M. Vollenbroek-Hutten</i>	
Postural Responses of Adults with Cerebral Palsy to Combined Base of Support and Visual Field Rotation	257
<i>J. C. Slaboda, R. T. Lauer, E. A. Keshner</i>	
Visual Sensitivity Modulates Postural Sway in a Virtual Environment in Healthy Elderly and Individuals with Stroke	263
<i>J. C. Slaboda, E. A. Keshner</i>	
Arm Motor Rehabilitation in Chronic Stroke Effects of Two Training Environments	269
<i>S. K. Subramanian, C. B. Lourenco, H. Sveistrup, M. F. Levin</i>	
Rehabilitation Robot for Unimanual and Bimanual Training of Hemiparetic Subjects	270
<i>M. Trlep, M. Mihelj, M. Munih, U. Puh</i>	
Mirror Feedback in Virtual Reality Elicits Ipsilesional Motor Cortex Activation in Chronic Stroke Patients	276
<i>E. Tunik, S. Saleh, H. Bagce, A. Merians, S. V. Adamovich</i>	
Short-Term Practice with Customized 3D Immersive Videogame Improves Arm-Postural Coordination in Patients with TBI	283
<i>K. I. Ustinova, N. Cassavaugh</i>	
Effects of Shading and Droplines on Object Localization in Virtual Rehabilitation for Patients with Neurological Conditions	290
<i>W. M. Van Den Hoogen, P. Feys, S. Notelaers, L. Kerhofs, W. A. Usselsteijn, K. Coninx, K. Baeten, I. Lamers</i>	
Virtual Reality Rehabilitation System for Neuropathic Pain and Motor Dysfunction in Spinal Cord Injury Patients	296
<i>M. Villiger, M.-C. Hepp-Reymond, P. Pyk, D. Kiper, K. Eng, N. Estevez, S. S. Kollias, A. Curt, S. Hotz-Boendermaker, J. Spillman, B. Meilick</i>	
Usability of Technology Supported Social Competence Training for Children on the Autism Spectrum	300
<i>P. L. Weiss, E. Gal, S. Cobb, L. Millen, T. Hawkins, T. Glover, D. Sanassy, M. Zancanaro, L. Giusti, S. Eden</i>	
Virtual Rehabilitation of Upper-Limb Function in TBI: A Mixed-Approach Evaluation of the Elements System	308
<i>P. H. Wilson, N. Mumford, J. Duckwork, P. Thomas, D. Shum, G. Williams</i>	
Head Stabilization Shows Multisensory Dependence on Spatiotemporal Characteristics of Visual and Inertial Passive Stimulation	316
<i>W. G. Wright, M. Agah, K. Darvish, E. A. Keshner</i>	
Altered Steering Strategies for Goal-Directed Locomotion in Stroke	320
<i>A. S. Aburub, A. G. Popox, A. Lamontagne</i>	

POSTERS

Active Video Games and Children with Cerebral Palsy the Future of Rehabilitation?	322
<i>L. Ballaz, M. Robert, M. Lemay, L. Ballaz, M. Robert, F. Prince, M. Lemay</i>	
The Effect of Social Gaming in Virtual Reality Based Rehabilitation of Stroke Patients	324
<i>B. R. Ballester, S. B. I Badia, P. F. M. J. Verschure</i>	
A Reliable Low-Cost Platform for Neglect Virtual Rehabilitation	326
<i>N. A. Borghese, A. Sedda, R. Mainetti, M. Ronchetti, F. Pasotti, G. Bottini</i>	
The Effects of Manipulation of Visual Feedback in Virtual Reality on Cervical Activity a Pilot Study	328
<i>J. Brand, O. Geisseler, M. Morari, D. Kiper, K. Eng</i>	
Ubi-REHAB: An Android-Based Portable Augmented Reality Stroke Rehabilitation System using the eGlove for Multiple Participants	330
<i>Y. Choi</i>	
Is use of the Nintendo Wii Fit in Physiotherapy As Effective As Conventional Physiotherapy Training for Hospitalised Older Adults?	332
<i>M. Crotty, K. Laver, S. Quinn, J. Ratcliffe, S. George, C. Whitehead, O. Davies</i>	
Virtual Reality Enhanced Balance Training for Service Members with Amputations	334
<i>V. Everding, S. E. Kruger</i>	
Cycling Rate is Modulated by Optic Flow in a Virtual Bicycle Environment	336
<i>V. Gade, I. Maidan, R. Gallagher, C. Torres, J. E. Deutsch</i>	

The Contribution of A VR-Based Programme in Cognitive Rehabilitation Following Stroke	338
<i>P. Gamito, J. Oliveira, J. Pacheco, N. Santos, D. Morais, T. Saraiva, F. Soares, C. Sottomayor</i>	
A Virtual Reality System for Robot-Assisted Gait Training Based on Game Design Principles	340
<i>U. Gotz, K. Brutsch, R. Bauer, F. Faller, R. Spoerri, A. Mayer-Heim, R. Reiner, A. Koenig</i>	
Web Service for Cognitive Remediation in Depression	342
<i>O. Grynszpan,</i>	
Introducing an User-Tailored Rehabilitation System for Patients in their Home and Work Environment	344
<i>M. Hennes, F. Kohler, C. Disselhorst-Klug</i>	
Trial-To-Trial Variability Differs Between Low Versus High Responders in Motor Imagery Near-Infrared Spectroscopy Study	346
<i>L. Holper, M. Wolf, N. Kobashi, D. Kiper, K. Eng</i>	
Development of a Virtual Reality Leg-Cycling Training System for Stroke Patients	348
<i>L. Hsin-Chang, Y.-H. Hsueh, C.-Y. Yeh, S.-L. Chen</i>	
ImAble System for Upper Limb Stroke Rehabilitation	350
<i>K. Jordan, M. Sampson, J. Hijmans, M. King, L. Hale</i>	
Energy Demands of Individuals Post-Stroke During Interactive Video Gaming	352
<i>M. Kafri, M. J. Myslinski, J. E. Deutsch</i>	
Understanding Psychophysiological Response to A Virtual Reality-Based Social Communication System for Children with ASD	354
<i>U. Lahiri, K. C. Welch, Z. Warren, N. Sarkar</i>	
Virtual Reality Games for Rehabilitation Perspectives from the Users and New Directions	356
<i>G. N. Lewis, C. Woods, J. A. Rosie, K. M. McPherson</i>	
Development of A Haptic Keypad for Training Finger Individuation After Stroke	358
<i>T. Lord, Y. Li, N. Stoykov, D. Kamper, D. M. Keeffe</i>	
The Role of Visual Feedback in Conventional Therapy and Future Research	360
<i>B. Molier, G. B. Prange, J. H. Buurke</i>	
Spatial Orientation Decline in Elderly Population	362
<i>F. Morganti, G. Riva</i>	
User-Acceptance and Flow in Two Gaming Platforms used for Exercise	364
<i>J. Robinson, P. Van Schaik, A. Macsween, J. Dixon, D. Martin</i>	
Low-Cost Motion Interactive Video Games in Home Training for Children with Cerebral Palsy A Kinematic Evaluation	366
<i>M. Sandlund, H. Grip, C. Higer, E. Domellof, L. Ronnqvist</i>	
Use of Novel Virtual Reality System for the Assessment and Treatment of Unilateral Spatial Neglect A Feasibility Study	368
<i>H. Sugarman, A. Weisel-Eichler, A. Burstin, R. Brown</i>	
10 Years Experience in the Application of the Reinforced Feedback in Virtual Environment (Rfve) for Neurorehabilitation: Preliminary Results from a Retrospective Analysis in Stroke Patients	370
<i>A. Turolla, M. Agostini, C. Zucconi, P. Kiper, A. Vendramin, P. Tonin, D. Mauro, L. Piron</i>	
Improving Dexterity in Children with Cerebral Palsy	372
<i>H. J. A. Van Hedel, K. Wick, A. Meyer-Heim, K. Eng</i>	
Serious Gaming to Improve Bimanual Coordination in Children with Spastic Cerebral Palsy	374
<i>E. C. P. Van Loon, C. E. Peper, A. Van De Rijt, A. Salverda</i>	
Cognitive Demand in A VR-Enriched Arm Training And Its Relation to Performance, Motivation and Cognitive Abilities	376
<i>K. Volkening, J. Bergmann, F. Muller, J. Zihlerl, D. Novak, M. Mihelj, M. Munih</i>	
Usability of EEG Cortical Currents in Classification of Vowel Speech Imagery	378
<i>N. Yoshimura, A. Satsum, M. Sato, C. S. Dasalla, T. Hanakawa, Y. Koike</i>	
Author Index	