

2016 IEEE International Conference on Serious Games and Applications for Health (SeGAH 2016)

**Orlando, Florida, USA
11 – 13 May 2016**



**IEEE Catalog Number: CFP16SEG-POD
ISBN: 978-1-5090-2211-3**

**Copyright © 2016 by the Institute of Electrical and Electronics Engineers, Inc
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

******This publication is a representation of what appears in the IEEE Digital Libraries. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP16SEG-POD
ISBN (Print-On-Demand):	978-1-5090-2211-3
ISBN (Online):	978-1-5090-2210-6

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Table of Contents

Paper Number	Title/Authors	
2	A Curious Relationship between Feeling Level and Cognitive Function in Female Brain during Pregnancy and Childbearing	1
	Hiroko Kotani, Maka Matsuno and Hidenori Nakagawa	
4	Virtual Promenade: A New Serious Game for the Rehabilitation of Older Adults with Post-fall Syndrome	6
	Pierre Wagnier, Edmond Phuong, Kévin Marivan, Samuel Benveniste, Frédéric Bloch, Serge Reingewirtz, Gilles Kemoun and Anne-Sophie Rigaud	
5	Force Modeling and Gamification for Epidural Anesthesia Training	14
	Aura Conci, André Luiz Brazil, Reinaldo Rodriguez Ramos, Noel Rodriguez-Hernandez, Leonardo Kayat Bittencourt and Esteban Walter Gonzalez Clua	
7	How Would You Like to be Rewarded? Relating the Big-Five Personality Traits with Reward Contingency in a Cognitive Training Puzzle Game	22
	Aniket Nagle, Robert Riener and Peter Wolf	
8	Field Evaluation with Cognitively-Impaired Older Adults of Attention Management in the Embodied Conversational Agent Louise	29
	Pierre Wagnier, Giovanni Carletti, Yann Laurent, Samuel Benveniste, Pierre Jouvelot and Anne-Sophie Rigaud	
9	MyDailyRoutine - A Serious Game to Support People Suffering from a Cerebral Dysfunction	37
	René Baranyi, Rafael Perndorfer, Nadja Lederer, Birgit Scholz and Thomas Grechenig	
10	Architecture to Portals of Serious Games and Virtual Environments with Performance Evaluation during Sequences of Activities	43
	Thaise K. L. Costa, Liliane S. Machado, Ana Maria G. Valença and Ronei M. Moraes	
11	Sepsis Fast Track: A Simulation Game for Clinical Education based on the Sepsis Fast Track Protocol	51
	Claudia Ribeiro, Micaela Monteiro and Jannicke Baalsrud Hauge	
12	Serious Games Taxonomy: Virtual Clinic Learning Environment	59
	Joshua Peery	
14	eMotiCan: An Assessment Game for Emotion Recognition in Children with Autism	63
	Deborah Sturm, Bertram Ploog and Ed Peppe	
15	Enhancing Protective Role-Playing Behaviors through Avatar-Based Scenarios	70
	Charles Hughes, Jennifer Epstein, Thomas Hall, Kathleen Ingraham and Darin Hughes	
16	Kid-Ney's Journey: a Game to Support Treatment Selection for People with Chronic Kidney Failure	76
	Anne Carlijn Vis	
21	Improving perspective Taking and Empathy in Children with Autism Spectrum Disorder	83
	Darin Hughes, Eleazar Vasquez and Erika Nicsinger	
22	Designing the Model Patient: Data-Driven Virtual Patients in Medical Education	88
	Dmitriy Babichenko, Marek Druzdzel, Jonathan Velez, Lorin Grieve, Ravi Patel, Taylor Neal, James McCray, Rae-Djamaal Wallace and Sean Jenkins	
23	A taxonomy for digital badge design in medical technologies	96

Table of Contents

	Rudy McDaniel	
24	A 3D Serious Game for Medical Students Training in Clinical Cases	104
	Rodrigo Lima, Araken Santos, Francisco Milton Mendes Neto, Ademar Sousa Neto, Felipe Leão, Francisco Macedo and Anne Canuto	
25	Outcome-focused design for health education games Understanding playing techniques and values reinforced by a game's procedural rhetoric	113
	Emily Johnson	
26	A Natural Locomotion Interface: Its Impact on Presence and Usage in a Social-media Charity Event for Mental Health	117
	James Dannatt, Michael Barlow and Erandi Lakshika	
27	A serious game to treat childhood obesity	125
	Simon Mayr, Lev Ledit, Paolo Petta, Christiane Eichenberg and Brigitte Sindelar	
28	Acupressure Game System with Interactive Installations	131
	Jing-Hui Xu, Chun-Tsai Wu and Szu-Ming Chung	
29	A Serious Game to Improve Posture and Spinal Health While Having Fun	137
	Maria Andreia F. Rodrigues, Daniel V. Macedo, Herleson P. Pontes, Yvens R. Serpa and Ygor R. Serpa	
30	Serious games for the cognitive stimulation of Elderly People	145
	Rodríguez Fórtiz María José, Carlos Rodríguez-Domínguez, Cano Olivares Pedro, Revelles-Moreno Jorge, Rodríguez-Almendros María Luisa, Hurtado-Tores María Visitación and Rute-Pérez Sandra	
32	Video Game Experience and Basic Robotic Skills	152
	Alyssa Tanaka, Roger Smith and Charles Hughes	
34	Analysis and review of apps and serious games on mobile devices intended for people with visual impairment	158
	Maria Isabel Torres-Carazo, Rodríguez Fórtiz María José and Maria Visitación Hurtado	
36	User Experience Design Considerations for Healthcare Games and Applications	166
	Carrie Crossley, Joseph R. Fanfarelli and Rudy McDaniel	
37	Motivating Elderly To Exercise – Recreational Virtual Environment for Indoor Biking	174
	Jon Ram Bruun-Pedersen, Stefania Serafin and Lise Busk Kofoed	
39	Enhancing Combat Medic Training with 3D Virtual Environments	183
	Randy Brown, Steve McIlwain, Brad Willson and Matthew Hackett	
41	Robust phoneme recognition for a speech therapy environment	190
	Andre Grossinho, Isabel Guimaraes, Joao Magalhaes and Sofia Cavaco	
42	Redesigning Research: Accelerating the Pace of Research through Technology Innovation	197
	Michael Powell and Wilson To	
43	Beyond Fun and Games: Towards an Adaptive and Emergent Learning Platform for Pre-Med Students With the UT TIME Portal	202

Table of Contents

	Marjorie Zielke, Djakhangir Zakhidov, Daniel Jacob and Gary Hardee	
45	A fully customizable truck-driving simulator for the care of people suffering from Post-Traumatic Stress Disorder	210
	Adrien Ecrepont, Corentin Haidon, Benoit Girard and Bob-Antoine Jerry Menelas	
47	Playing at Empathy: Representing and Experiencing Emotional Growth through Twine Games	218
	Anastasia Salter	
48	A Secure Framework for Sharing Electronic Health Records over Clouds	226
	Ahmed Ibrahim, Baban Mahmood and Mukesh Singhal	
49	SMAI – Mobile System for Elderly Monitoring	234
	Matheus Costa Stutzel, Michel Fillipo, Alexandre Sztajnberg, André Brittes and Luciana Branco Da Motta	
50	Kidney Segmentation in 3D CT Images Using B-Spline Explicit Active Surfaces	242
	Helena Torres, Bruno Oliveira, Sandro Queirós, Pedro Morais, Jaime C. Fonseca, Jan D'Hooge, Nuno F. Rodrigues and João L. Vilaça	
52	Dynamic Difficulty Adjustment with Evolutionary Algorithm in Games for Rehabilitation Robotics	249
	Kleber Andrade, Marcio Crocomo, Glaucio Caurin and Thales Pasqual	
53	Psychomotor Skills Measurement for Surgery Training using Game-based Methods	257
	Tom Carbone, Rudy McDaniel and Charles Hughes	
54	The Design Process of an e-Health project – Applying the HSI framework for interface analysis	263
	Cláudia Pernencar and Teresa Romão	
55	Design, Implementation and Evaluation of a Game-Based Intervention Targeting Latino Children for Improving Obesity Outcomes	271
	Ashish Amresh, Rahul Salla, Madhumita Sinha and Rebecca Birr	