

2015 6th IEEE International Conference on Cognitive Infocommunications (CogInfoCom 2015)

**Gyor, Hungary
19 – 21 October 2015**



**IEEE Catalog Number: CFP1526R-POD
ISBN: 978-1-4673-8130-7**

**Copyright © 2015 by the Institute of Electrical and Electronic 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: CFP1526R-POD
ISBN (Print-On-Demand): 978-1-4673-8130-7

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

Symbolic Cognitive Abilities Implementation on the NI-9631 Pervasive Mobile Robot	11
<i>Szász Csaba</i>	
Adaptive user interface for assisting the drivers' decision making	17
<i>Joni Jämsä and Heidi Kaartinen</i>	
Mobile Applications for Traffic Safety	19
<i>Joni Jämsä and Heidi Kaartinen</i>	
Cloud4all: accessibility through cloud-based personalization	25
<i>Christoffer Friberg</i>	
Intelligent Appraisal for Sustainable Urban Mobility Planning	27
<i>Mattias Juhász</i>	
Knowledge-based Process Management	33
<i>Péter Szmodics</i>	
Cognitive Trainings Can Improve Intercommunication with e-Learning System	39
<i>Liubov S. Lisitsyna, Andrey V. Lyamin, Elena N. Cherepovskaya, Ivan A. Martynikhin</i>	
Server Sounds and Network Noises	45
<i>Tobias Hildebrandt, Stefanie Rinderle-Ma</i>	
Experimenting Industrial Internet with a Mobile Robot Expanding Human Cognitive Functions	51
<i>Marjo Heikkilä, Sakari Pieskä, Sikke de Jong, Christiaan Elsinga</i>	
Virtual Evaluation Tool in Driving Inspection and Training	57
<i>Mika Luimula, Agnieszka Besz, Paula Pitkäkangas, Taisto Suominen, Jouni Smed, Faramosh Rashid Izullah, Heikki Hämäläinen</i>	
Utilizing the Synergic Combination of Art and Game Technologies in Engineering Applications	61
<i>Mika Luimula, Taisto Suominen, Sakari Pieskä</i>	
Visual Analytics Support for the SOI VLSI Layout Design for Multiple Patterning Technology	67
<i>Vadim Shakhnov, Vladimir Makarchuk, Lyudmila Zinchenko, Vladimir Verstov</i>	
IEEE 802.11p and LTE as Enablers of Cognitive Vehicle-to-Infrastructure Communication	71
<i>Mikko Valta, Mirjami Jutila, Joni Jämsä</i>	
The significance of cognitive infocommunications in developing assistive technologies for people with non-standard cognitive characteristics	
CogInfoCom for people with non-standard cognitive characteristics	77
<i>Lajos Izsó</i>	
Overlapping Speech, Utterance Duration and Affective Content in HHI and HCI - an Comparison	83
<i>Ingo Siegert, Ronald Böck, Andreas Wendemuth, Bogdan Vlasenko, Kerstin Ohnemus</i>	
Generalizing Route Descriptions Based on the User's Spatial Knowledge	89
<i>Farid Karimipour, Alireza Niroo, Negar Alinaghi</i>	
Application of Cognitive Infocommunications in Public Transport Journey Planning Relationship of Passenger Decisions and Online Passenger Information Systems	95
<i>Ágoston Winkler, Balázs Horváth</i>	
Distance-based Dialog Acts Labeling	99
<i>Stanislav Ondáš, Jozef Juhár</i>	
The mathability of spreadsheet tools	105
<i>Piroska Biró, Mária Csernoch</i>	

The mathability of computer problem solving approaches	111
<i>Piroska Biró, Mária Csernoch</i>	
Towards Computer-Assisted Language Learning with Robots, Wikipedia and CogInfoCom	115
<i>Graham Wilcock, Seichi Yamamoto</i>	
MPT: a Solution for Eliminating the Effect of Network Breakdowns in case of HD Video Stream Transmission	121
<i>Béla Almási, Márk Kósa, Ferenc Fejes, Róbert Katona, Levente Püsök</i>	
A Review of the Cognitive Capabilities and Data Analysis Issues of the Future Industrial Internet-of-Things	127
<i>Jouni Tervonen, Ville Isoherranen, Marjo Heikkilä</i>	
Advanced Information Services for Cognitive Behaviour of Travellers	133
<i>Csaba Csiszár, Dávid Földes</i>	
Anger Detection in Call Center Dialogues	139
<i>Dimitris Pappas, Ion Androutsopoulos, Haris Papageorgiou</i>	
Human decisions at irregular overtakings.	145
<i>Dániel Miletics</i>	
Posters, metadata, description schemas.	151
<i>Margit Némethi-Takács</i>	
Cognitive interpretation of different spatial databases in web environment.	159
<i>Dániel Balla, Norbert Barkóczy, Marianna Zichar, Orsolya Gyöngyi Varga</i>	
A Fork Implementation of the Police Edition of the OOCWC System	163
<i>Renátó Besenczi, Tamás Katona, Mihály Szilágyi</i>	
Design of Personal Mobility Motion based on Cooperative Movement with a Companion	165
<i>Tsukasa Kobayashi, Daisuke Chugo, Satoshi Muramatsu, Sho Yokota, Hiroshi Hashimoto</i>	
Influencing household location decision making	171
<i>Bertalan Gaál</i>	
Distributed processing of biological interactions using Hadoop	175
<i>Bence Auer, Bálint Antal</i>	
Problems of Blind Chess Players	179
<i>Jan Balata, Zdenek Mikovec, Pavel Slavik</i>	
Investigating the Usability of Interactive Physical Activity Games for Elderly: A Pilot Study	185
<i>Aung Pyae,, Mika Luimula, Jouni Smed</i>	
Synthesis of Speaking Styles with Corpus- and HMM-Based Approaches	195
<i>Péter Nagy, Csaba Zainkó, Géza Németh</i>	
The MOBOT Human-Robot Communication Model	201
<i>Stavroula–Evita Fotinea, Eleni Efthimiou, Maria Koutsombogera, Athanasia–Lida Dimou, Theodore Goulas, Petros Maragos, Costas Tzafestas</i>	
User experience in a collaborative 3D virtual environment A framework for analyzing user interviews.	207
<i>Dalma Geszten, Balázs Péter Hámornik, Károly Hercegfí</i>	
The connection of the style of interactions and the collaboration in a virtual work environment.	211
<i>Laura Kiss, Balázs Péter Hámornik, Dalma Geszten, Károly Hercegfí,</i>	
Training of Business Skills in Virtual Reality	215
<i>Laura Kiss, Balázs Péter Hámornik, Máté Köles, Péter Baranyi, Péter Galambos, György Persa</i>	
Introduce the Term Cognitive Entity in Information and Communications Technology Investment Analysis	217
<i>Ferenc Erdős, Gábor Kallós</i>	
Qualitative Measures for Evaluation of Navigation Applications for Visually Impaired	223
<i>Ivo Maly, Jan Balata, Ondrej Krejcir, Eduard Fuzessery, Zdenek Mikovec</i>	

Digital age: Information and communication technologies, tools and trends for communication management	229
<i>Márta Konczosné Szombathelyi, Patrick Waldbuesser, Ralph Tench</i>	
Connected Cognitive Entity Management New Challenges for Executive Decision-Making	235
<i>Dr. Tibor Dóry, Dr. Patrick Waldbuesser</i>	
Integration opportunities of the ‘CommonSense for Scholars’ system at the University of Debrecen	241
<i>Gábor Kusper, Nikolett Fanni Menyhárt, Gábor Percze, Havasi Gábor</i>	
Adding haptic feedback to web applications towards improving end-users’ cognitive capabilities	245
<i>Nikolaos Kaklanis, Konstantinos Votis, Dimitrios Tzovaras</i>	
Toward a knowledge base of literary content focusing on the ancient Library of Alexandria in the three dimensional space	251
<i>István Boda, Erzsébet Tóth, István Csont, László T. Nagy</i>	
TrendMiner: Large-Scale Analysis of Political Attitudes in Public Facebook Messages	265
<i>Márton Miháلتz, Tamás Váradi</i>	
GraFooSha: Food Sharing for Senior Users	267
<i>Miroslav Macik, Anna Kutikova, Zdenek Mikovec, Pavel Slavik</i>	
Supervising Biofeedback-based Serious Games	273
<i>Dorottya Bodolai, László Gazdi, Bertalan Forstner, Luca Szegletes</i>	
Evaluating application usability with portable biofeedback system for mobile and desktop	279
<i>Zsolt Medgyesi, Krisztián Pomázi, Luca Szegletes, Bertalan Forstner</i>	
Comparison of skewness-based salient event detector algorithms in speech	285
<i>Annamária Kovács,, Gábor Kiss, Klára Vicsi, István Winkler,, Martin Coath</i>	
ProsoTool, a Method for Automatic Annotation of Fundamental Frequency	291
<i>István Szekrényes</i>	
A Study on Imitation Motion based on Imitated Person’s view - Finding out the differences between imitation and non-imitation	297
<i>Sho Yokota, Taeko Tanaka, Hiroshi Hashimoto, Daisuke Chugo, Kuniaki Kawabata</i>	
Cognitive Infocommunications in Transport Related Decision Making	303
<i>Balázs Horváth</i>	
Towards Coping and Imagination for Cognitive Agents	307
<i>Matthias Wolff, Ronald Römer, Günther Wirsching,</i>	
How Does Environment and Form Influence Colour Perception?	313
<i>Katalin Gombos, Cecilia Sik Lanyi, Krisztián Simon</i>	
Eye tracking precision in a virtual CAVE environment	319
<i>Máté Köles, Károly Hercegfı</i>	
Towards a physiology based difficulty control system for serious games	323
<i>Máté Köles, Luca Szegletes, Bertalan Forstner</i>	
Public Transport and The Cognitive Infocommunication	329
<i>Richárd Horváth</i>	
Using Crowdsensed Information for Traffic Simulation in the Robocar World Championship Framework	333
<i>Renátó Besenczi, Mihály Szilágyi, Norbert Bاتفai, András Mamenyák, István Oniga, Márton Ispány</i>	
An Online Application for Storing, Analyzing, and Sharing Dermatological Data	339
<i>János Tóth, Lóránt Bartha, Tamás Szabó, István Lázár, Balázs Harangi, András Hajdu</i>	
Recognition of road types and speed choice	343
<i>Gabriella Kosztolanyi-Ivan, Csaba Koren, Attila Borsos</i>	
Brain Activity Measured with fNIRS for the Prediction of Cognitive Workload	349
<i>Anirudh Unni, Klas Ihme, Henrik Surm, Lars Weber, Andreas Lüdtke, Daniela Nicklas, Meike Jipp, Jochem W. Rieger</i>	

Disambiguated linear word translation in medium European language.	355
<i>Márton Makrai</i>	
Computer assisted method for cognitive improvement of color aptitude	357
<i>Erika Perge, Marianna Zichar</i>	
The Role of Human Factors in Road Design.	363
<i>Attila Borsos, Sibylle Birth, Hans-Joachim Vollpracht</i>	
Adaptive Services with Cloud Architecture for Telemedicine	369
<i>Ábel Garai, István Péntek</i>	
Experiences of virtual desktop collaboration experiments	375
<i>Károly Hercegfi, Anita Komlódi, Bálint Szabó, Máté Köles, Emma Lógó, Balázs P. Hámornik, Gyöngyi Rózsa</i>	
Wheelchair driving simulator Computer aided training for persons with special need.	381
<i>Cecília Sik Lanyi, Veronika Szucs, Szilvia Mogan Tolgyesy, Zoltan Toth</i>	
Cluster and Discover Services in the Smart Campus Platform for Online Programming Contests	385
<i>Attila Adamkó, Tamás Kádek, Lajos Kollár, Márk Kósa, Róbert Tóth</i>	
Granger causal modelling for analysing time series of psychophysiological and behavioural data gained during virtual reality experiments	391
<i>Lajos Izsó, Károly Hercegfi, Máté Köles, Balázs Péter Hámornik</i>	
Investigating the Effects of Robot Affect and Embodiment on Attention and Natural Language of Human Teammates.	397
<i>Thomas J. Donahue, Matthias Scheutz</i>	
Methodologies for subjective performance assessment of collaboration	403
<i>Emma Lógó, Károly Hercegfi, Balázs Péter Hámornik</i>	
Effects of Text Difficulty and Readers on Predicting Reading Comprehension from Eye Movements.	407
<i>Leana Copeland, Tom Gedeon, Sabrina Caldwell</i>	
Gender Disparity and the Creepy Hill in Face Replacement Videos	413
<i>Xindi Li, Tom Gedeon</i>	
Full-body animations and new faces for a WebGL based MPEG-4 avatar.	419
<i>Roland Rácz, Ákos Tóth, Ildikó Papp, Roland Kunkli</i>	
Classifying Document Categories Based on Physiological Measures of Analyst Responses	421
<i>Christopher Chow, Tom Gedeon</i>	
Empirical Findings in Cognitive Entity Management. A Challenge in the Digital Era	433
<i>Patrick Waldbuesser, László Imre Komlósi</i>	
The Cognitive Entity Generation: Emergent Properties in Social Cognition	439
<i>László Imre Komlósi, Patrick Waldbuesser</i>	
Evaluation of Human Behaviour at Pedestrian Crossings.	443
<i>Emese Makó</i>	
A Visualization of the Medieval Church of Zelemér	449
<i>Attila Gilányi, Marianna Bálint, Róbert Hajdu, Sándor Tarsoly, Imre Erdős</i>	
Development of an Online Subjective Evaluation System for Recorded Speech of Deaf and Hard of Hearing Children . . .	455
<i>Attila K. Varga, László Czap</i>	
The evaluation of the results of an eye tracking based usability tests of the so called Instructor's Portal framework. . . .	459
<i>Csilla Kvaszingerné Prantner</i>	
Information Flow and Complex Event Processing of the Sensor Network Communication	467
<i>Zoltán Gál, Hunor Sándor, Béla Genge</i>	

Mathability and Computer Aided Mathematical Education	473
<i>Katarzyna Chmielewska, Attila Gilányi</i>	
Interactive Object Recognition with Sensor Fusion	479
<i>László Czúni, Metwally Rashad</i>	
Special Coginfo Application by Non-business Organizations Case Study on Marketing Communication of a Higher Education Institution	483
<i>Szabolcs Rámháp, Márta Konczosné Szombathelyi, Eszter Petra Májer</i>	
On Multimodality in the Perception of Emotions from Materials of the HuComTech Corpus	489
<i>Laszlo Hunyadi</i>	
Cross-form facilitation effects from simultaneous gesture/word combinations with ERP analysis	493
<i>Thomas Ousterhout</i>	
Reaction time for two types of semantically related gesture and sentence pairs	499
<i>Thomas Ousterhout, Costanza Navarretta</i>	
Kinetic-Based Micro Energy-Harvesting for Wearable Sensors	505
<i>Dora Budić, Dina Šimunić, Kamran Sayrafian</i>	
InfoPlant: Multimodal augmentation of plants for enhanced human-computer interaction	511
<i>Jan Hammerschmidt, Thomas Hermann, Alex Walender, Niels Krömker</i>	
HoloR: Interactive Mixed-Reality Rooms.	517
<i>Carsten Schwede, Thomas Hermann</i>	
A Zen Garden Interface for the Interactive Control of Sonic Ambiences in Smart Environment.	523
<i>Jiajun Yang, Thomas Hermann</i>	
Impact of Human Factor on Speed Choice	527
<i>Stanislaw Gaca, Mariusz Kiec</i>	
Pauses Delimiting Semantic Boundaries	533
<i>Costanza Navarretta</i>	
Learning Affective Projections for Emoticons on Twitter	539
<i>Michael Sejr Schlichtkrull</i>	
Q-learning vs. FRIQ-learning in the Maze problem	545
<i>Tamás Tompa, Szilveszter Kovács</i>	
Intelligent Route Planning System for Car Drivers in a City	551
<i>Anikó Vágner</i>	
Verification of the Existing Model for Passing Sight Distance on Single Two-Lane Rural Carriageways	557
<i>Anne Veters, Thomas Jaehrig</i>	
Factors Affecting Identification of Tasks using Eye Gaze	563
<i>Khushnood Naqshbandi, Tom Gedeon, Umran Azziz Abdulla, Leana Copeland</i>	
The Impact of Bias in Latent Fingerprint Identification	569
<i>András Czebe, Gábor Kovács</i>	
A Database of Elementary Human Movements Collected with RGB-D type Camera.	575
<i>Karolina Galinska, Piotr Luboch, Konrad Kluwak, Marcin Bieganski</i>	
Presentation of the Church of Zelemér in the Virtual Collaboration Arena (VirCA).	581
<i>Attila Gilányi, Marianna Bálint, Róbert Hajdu, Sándor Tarsoly, Imre Erdős</i>	
Revisiting the concept of generation CE - Generation of Cognitive Entities	583
<i>Peter Baranyi, Adam B. Csapo</i>	

“Empirical Identification” of the Creative Cognitive Unconscious Processes in the Collective Individuation Concerning the “World-Clock Models”	
Part I. Pauli’s World Clock Dreams and Some Historical “World-Clock Models”	587
<i>Péter Várlaki, Péter Baranyi</i>	
“Empirical Identification” of the Creative Cognitive Unconscious Processes in the Collective Individuation Concerning the “World-Clock Models”	
Part II. Pauli’s Regiomontanus Dream and its Historical and Spiritual Background	607
<i>Péter Várlaki, Péter Baranyi</i>	
“Empirical Identification” of the Creative Cognitive Unconscious Processes in the Collective Individuation Concerning the “World-Clock Models”	
Part III. The Three Hidden Pillars of the World and the Fourth One	627
<i>Péter Várlaki,, Péter Baranyi</i>	
Introducing the Concept of Infotation	647
<i>Péter Baranyi, Péter Várlaki</i>	
Demonstration of a more comfortable, seamless measuring setting for EEG-based experiments	655
<i>Gábor Élő, Péter Szármes</i>	
Author’s Index	657