

2016 7th IEEE International Conference on Cognitive Infocommunications (CogInfoCom 2016)

**Wroclaw, Poland
16-18 October 2016**



**IEEE Catalog Number: CFP1626R-POD
ISBN: 978-1-5090-2646-3**

**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: | CFP1626R-POD |
| ISBN (Print-On-Demand): | 978-1-5090-2646-3 |
| ISBN (Online): | 978-1-5090-2645-6 |
| ISSN: | 2380-7350 |

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

| | |
|---|-----|
| Towards the Integration and Evaluation of Online Workload Measures in a Cognitive Architecture..... | 11 |
| <i>Bertram Wortelen, Anirudh Unni, Jochem W. Rieger and Andreas Ludtke</i> | |
| Talk to cloud | 17 |
| <i>Adam Skowroński, Anna Sokół and Kamila Skowrońska</i> | |
| Differences between alcoholic and non alcoholic individuals in the recognition of vocal emotional stimuli | 19 |
| <i>Anna Esposito and Alda Troncone</i> | |
| Atom Decomposition Based Stress Detection and Automatic Phrasing of Speech | 25 |
| <i>Mate Akos Tundik, Branislav Gerazov, Aleksandar Gjoreski, Gyorgy Szaszak</i> | |
| NeuroCar Virtual Driving Environment - Simultaneous Evaluation of Driving Skills and Spatial Perceptual-attentional Capacity | 31 |
| <i>Faramosh Rashid Izullah, Mika Koivisto, Artturi Aho, Teemu Laine, Heikki Hämäläinen, Pekka Qvist, Aapo Peltola, Paula Pitkäkangas and Mika Luimula</i> | |
| Face Recognition on Mobile Platforms..... | 37 |
| <i>Kornel Bertok and Attila Fazekas</i> | |
| Executive functions, temperament and character traits A quantitative analysis of the relationship between personality and prefrontal functions | 43 |
| <i>Raffaele Sperandeo, Mauro Maldonato, Gesualda Baldo and Silvia Dell'Orco</i> | |
| Why Visually Impaired People Resist to Adopt Touchscreen Smartphones in the Czech Republic? | 49 |
| <i>Jan Balata and Zdenek Mikovec</i> | |
| Cultural Heritage in a Pocket - Case Study “Turku Castle in Your Hand” | 55 |
| <i>Natasha Bulatovic Trygg and Mika Luimula</i> | |
| Can We Detect Speakers’ Empathy? A Real-Life Case Study | 59 |
| <i>Firoj Alam, Morena Danieli and Giuseppe Riccardi</i> | |
| Compassion, Empathy and Sympathy Expression Features in Affective Robotics | 65 |
| <i>Barbara Lewandowska-Tomaszczyk and Paul Wilson</i> | |
| Digital Manufacturing Toolbox for Supporting the Manufacturing SMEs..... | 71 |
| <i>Heidi Kaartinen, Sakari Pieskä and Jouni Vähäsöyrink</i> | |
| Demo: Medieval Gastro Box – Utilizing VR Technologies in Immersive Tourism Experience | 77 |
| <i>Pekka Qvist, Natasha Bulatovic Trygg, Mika Luimula, Aapo Peltola, Taisto Suominen, Vesa Heikkinen, Pasi Tuominen and Ossi Tuusvuori</i> | |
| Multipath strategies and solutions in multihomed mobile environments..... | 79 |
| <i>Ferenc Fejes, Robert Katona and Levente Pusok</i> | |
| An Approach to Interactive Deep Reinforcement Learning for Serious Games | 85 |
| <i>Aline Dobrovsky, Uwe M. Borghoff and Marko Hofmann</i> | |
| An unobtrusive sleep monitoring system for the human sleep behaviour understanding | 91 |
| <i>Paolo Barsocchi, Monica Bianchini, Antonino Crivello, Davide La Rosa, Filippo Palumbo, Franco Scarselli</i> | |
| Vocal tract and voice source features for monitoring cognitive workload | 97 |
| <i>Manuela Meier, Michal Borsky, Eydis H. Magnúsdóttir, Kamilla R. Johannsdóttir, Jon Gudnason</i> | |
| Analyzing the expression of annoyance during phone calls to complaint services..... | 103 |
| <i>Jon Irastorza and M. Ines Torres</i> | |
| A Study on Designing Ad Hoc Network Protocol using Bluetooth Low Energy | 109 |
| <i>Atsushi Ito, Takuya Kato, Hiroyuki Hatano, Mie Sato, Yu Watanabe, Eiji Utsunomiya, Yuko Hiramatsu and Fumihiko Sato</i> | |

| | |
|--|------------|
| Performance Evaluation of Transmission-Control Middleware in WLAN and LTE network | 115 |
| <i>Ayumi Shimada, Masato Oguchi, Saneyasu Yamaguchi, Heidi Kaartinen and Joni Jäms</i> | |
| Coboard Flowers: An Interactive Installation for Prague Spring International Music Festival | 121 |
| <i>Miroslav Macik, Anna Kutikova, Adam Sporka, Zdenek Mikovec</i> | |
| Automatic Falls Detection in Hospital-Room Context..... | 127 |
| <i>Alessandro Mecocci, Francesco Micheli, Claudia Zoppetti and Andrea Baghini</i> | |
| Adding Filled Pauses and Disfluent Events into Language Models for Speech Recognition | 133 |
| <i>Jan Staš, Daniel Hladek and Jozef Juhar</i> | |
| Video Content Abstraction as a Basis for the Specification of Video Communication Scenarios | 139 |
| <i>Christian Schenk, Sonja Schimmler and Uwe Borghoff</i> | |
| A unified cloud-based framework for AAL services provision to elderly with cognitive impairments | 145 |
| <i>Ageliki Konstadinidou, Nikolaos Kaklanis, Ioannis Paliokas, Dimitrios Tzovaras</i> | |
| Emotion Analysis in DiaCoSk Dialog Corpus..... | 151 |
| <i>Stanislav Ondas, Lenka Mackova and Daniel Hladek</i> | |
| Comparing the Aggregation Capability of the MPT Communications Library and Multipath TCP | 157 |
| <i>Akos Kovacs</i> | |
| Smartphoneless context-aware indoor navigation..... | 163 |
| <i>Miroslav Macik, Ivo Maly, Eva Lorencova, Tomas Flek and Zdenek Mikovec</i> | |
| Video time lag analysis in a remote collaborative framework..... | 169 |
| <i>Andrea Bulfone, Carlo Drioli, Giovanni Ferrin, Gian Luca Foresti</i> | |
| Novel Speech Features of Disturbances in Laryngeal Muscle Coordination | 175 |
| <i>Branimir Dropuljić, Davor Petrinović and Krešimir Čosić</i> | |
| Using Speech Analysis in Voice Communication A new approach to improve Air Traffic Management Security | 181 |
| <i>Milan Rusko and Michael Finke</i> | |
| Cognitive Telemedicine IoT Technology for Dynamically Adaptive eHealth Content Management Reference Framework embedded in Cloud Architecture..... | 187 |
| <i>Istvan Pentek, Attila Adamko and Abel Garai</i> | |
| Data Collection for Widely Distributed Mass of Sensors..... | 193 |
| <i>Attila Hideg, Laszlo Blazovics, Kristof Csorba and Marton Gotzy</i> | |
| Topical Unit Classification Using Deep Neural Nets and Probabilistic Sampling | 199 |
| <i>Gyorgy Kovacs, Tamas Grosz and Tamas Varadi</i> | |
| The influence of verticality metaphor on social judgment | 205 |
| <i>Karolina Ścigala and Bipin Indurkha</i> | |
| The Introduction of Gamification - A review paper about the applied gamification in the smartphone applications | 213 |
| <i>Aron Toth and Sarolta Tóvolgyi</i> | |
| When the “truth” can (softly) hurt. Effects of political orientation on different forms of parody..... | 219 |
| <i>Francesca D'Errico and Isabella Poggi</i> | |
| Mathability and an Animation Related to a Convex-Like Property..... | 227 |
| <i>Attila Gilanyi, Nelson Merentes and Roy Quinter</i> | |
| Predicting an Individual's Gestures from the Interlocutor's Co-occurring Gestures and Related Speech..... | 233 |
| <i>Costanza Navarretta</i> | |
| Cost-effective hand gesture computer control interface..... | 239 |
| <i>Gergely Sziladi, Tibor Ujbanyi and Jozsef Katona</i> | |
| Mathability and Mathematical Cognition..... | 245 |
| <i>Katarzyna Chmielewska, Attila Gilanyi and Agnieszka Lukasiewicz</i> | |

| | |
|---|-----|
| Speed control of Festo Robotino mobile robot using NeuroSky MindWave EEG headset based Brain-Computer Interface..... | 251 |
| <i>Jozsef Katona, Tibor Ujbanyi, Gergely Sziladi and Attila Kovari</i> | |
| What 3D technologies can bring into the education..... | 257 |
| <i>Ildiko Papp, Robert Tornai and Marianna Zichar</i> | |
| Developing a knowledge base of ancient literary texts in virtual space | 263 |
| <i>Istvan Boda, Erzsebet Toth, Istvan Csont and Laszlo T. Nagy</i> | |
| “Learn to play, noob!” - The identification of ability profiles for different roles in an online multiplayer video game in order to improve the overall quality of the new player experience..... | 271 |
| <i>Mate Koles and Zoltan Peter</i> | |
| Eye-Tracking Analysis of Computer Networks Exam Question Besides Different Skilled Groups | 277 |
| <i>Tibor Ujbanyi, Jozsef Katona, Gergely Sziladi and Attila Kovari</i> | |
| How Cognitive Infocommunications Play a Critical Role in Shaping the Future of Forensic Sciences | 283 |
| <i>Andras Czebe and Gabor Kovacs</i> | |
| Detecting Social Signals of Honesty and Fear of Appearing Deceitful: A Methodological Proposal | 289 |
| <i>Giovanna Leone, Stefano Migliorisi and Isora Sessa</i> | |
| Effect of a Chance Task Outcome on the Offers in the Ultimatum Game: The Mediation Role of Emotions..... | 295 |
| <i>Olimpia Matarazzo, Barbara Pizzini, Claudia Greco and Michele Carpentieri</i> | |
| Virtual Reality Systems in the Rehabilitation of Parkinson’s Disease..... | 301 |
| <i>Attila Gilanyi and Eszter Hidas</i> | |
| Presentation of an Animation of the $\$m\$$ -Convex Hull of Sets..... | 307 |
| <i>Attila Gilanyi, Nelson Merentes and Roy Quintero</i> | |
| Multidisciplinary Wow Experiences Boosting SMEs | 309 |
| <i>Sakari Piesk , Mika Luimula, Heidi Kaartinen, Pekka Qvist, Taisto Suominen and Ossi Tuusvuor</i> | |
| Self-Standardizing Cognitive Profile Based on Gardner’s Multiple Intelligence Theory | 317 |
| <i>Krisztian Daniel Pomazi, Laszlo Gazdi, Bertalan Radostyan, Bertalan Forstner and Luca Szegletes</i> | |
| Uniform Dispersal of Oblivious Mobile Robots..... | 323 |
| <i>Attila Hideg, Laszlo Blazovics, Bertalan Forstner</i> | |
| Adaptive Figural Abstraction Test with Generated Exercises..... | 327 |
| <i>Bertalan Radostyan, Krisztian Daniel Pomazi, Laszlo Gazdi, Bertalan Forstner and Luca Szegletes</i> | |
| Experimenting with classifiers in biofeedback-based mental effort measurement..... | 331 |
| <i>Laszlo Gazdi, Krisztian Daniel Pomazi, Bertalan Radostyan, Bertalan Forstner and Luca Szegletes</i> | |
| Conducting neuropsychological tests with a humanoid robot: design and evaluation..... | 337 |
| <i>Duc-Canh Nguyen, Gerard Bailly and Frederic Elisei</i> | |
| On the use of metaphors in designing educational interfaces | 343 |
| <i>Agata Wlaszczyck and Bipin Indurkha</i> | |
| Disruptive technologies in higher education | 347 |
| <i>Ildiko Horvath</i> | |
| Digital Life Gap between students and lecturers..... | 353 |
| <i>Ildiko Horvath</i> | |
| Innovative engineering education in the cooperative VR environment..... | 359 |
| <i>Ildiko Horvath</i> | |

| | |
|--|-----|
| Proposing the hypothesis: Different face perception in autism spectrum disorders during a free browsing task using eye-tracking method compared to typical development peers | 365 |
| <i>Anna Sudar</i> | |
| Establish innovative learning environment by virtual lab concept | 373 |
| <i>Mariann Varaljai</i> | |
| Cyclic scheduling of a robotic cell..... | 379 |
| <i>Wojciech Bozejko, Andrzej Gnatowski, Ryszard Klempous, Michael Affenzeller Andreas Beham</i> | |
| Declarative Approach to DSS Design for Supervisory Control of Production Orders Portfolio..... | 385 |
| <i>Grzegorz Bocewicz, Ryszard Klempous and Zbigniew Banaszak</i> | |
| Visual Communication in Expanding of Human-Computer Interactions | 391 |
| <i>Paweł Szczesny, Jan Nikodem and Konrad Kluwak</i> | |
| Estimating Task Difficulty in Educational Games..... | 397 |
| <i>Mate Szabo, Krisztian Daniel Pomazi, Bertalan Radostyan, Luca Szegletes and Bertalan Forstner</i> | |
| The Space of Intelligent Impressions* Smart technologies in the higher Engineering education..... | 403 |
| <i>Balazs Kosa, Norbert Sodar, Adrianna Barna</i> | |
| The Construction of Android Computer-based Application on Neurocognitive Executive Function for Early Age Children..... | 409 |
| <i>Donny Hendrawan, Claudya Carolina, Fasya Fauzani, Hanifah Nurul Fatimah, Muhammad Azmi Malik Ariefa and Farida Kurniawati</i> | |
| Evaluation of Human-Myo Gesture Control Capabilities in Continuous Search and Select Operations | 415 |
| <i>Adam Csapo, Arni Kristjansson, Hunor Nagy and Gyorgy Wersenyi</i> | |
| Contrasting Results and Effectiveness of Controlled Experiments with Crowdsourced Data in the Evaluation of Auditory Reaction Times | 421 |
| <i>Hunor Nagy, Adam Csapo and Gyorgy Wersenyi</i> | |
| Anatomically Relevant Pelvic Phantom for Surgical Simulation..... | 427 |
| <i>Illes Nigicser, Balazs Szabo, Laszlo Jaksa, Denes Akos Nagy, Szilvia Barcza, Tivadar Garamvolgyi, Peter Galambos, Tamas Haidegger</i> | |
| From human-computer interaction to cognitive infocommunications: a cognitive science perspective | 433 |
| <i>Agoston Torok</i> | |
| Synchronistic Historical Background for Jung-Pauli's Modelling of Psyche and Nature concerning the Aquarius Myth. Part I. The Aquarius mythologem in the "St John-St. Andrew" enamel picture of the Holy Crown of Hungary..... | 439 |
| <i>Peter Varlaki and Peter Baranyi</i> | |
| Synchronistic Historical Background for Jung-Pauli's Modelling of Psyche and Nature concerning the Aquarius Myth. Part II. The Aquarius mythologem and representation of St Andrew in the Hortus Deliciarum..... | 455 |
| <i>Peter Varlaki and Peter Baranyi</i> | |
| Jung and Pauli's Modelling of Psyche and Nature concerning the Aquarius Myth. Part I: On the Last Chapter of Jung-Pauli Collaboration | 469 |
| <i>Peter Varlaki and Peter Baranyi</i> | |
| Jung and Pauli's Modelling of Psyche and Nature concerning the Aquarius Myth. Part II: Further Aquarius Patterns in Jung Dreams, Visions and Transference cases, in the Background with Pauli..... | 485 |
| <i>Peter Varlaki and Peter Baranyi</i> | |