with valuable cooperation of

<table>
<thead>
<tr>
<th>Institution</th>
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<tbody>
<tr>
<td>Université de Bourgogne, Dijon France</td>
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<tr>
<td>Centre National de la Recherche Scientifique, France</td>
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<tr>
<td>Association de Promotion de la Recherche scientifique en système d’Information Multimédia en Émergence, Dijon France</td>
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<td>Università di Milan Italy</td>
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<td>Laboratoire LE2i UMR CNRS 5158, Dijon France</td>
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<td>Tokyo Denki University, Tokyo Japan</td>
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<td>SIGSMM (Special Interest Group on Semantic Multimedia Management)</td>
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<tr>
<td>French Chapter of the Special Interest Group on Applied Computing</td>
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<td>Hitachi Corporation, Tokyo Japan</td>
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Monday December 2, 2013
Conference opening (09:00 – 9:45)

Tuesday December 3, 2013
Keynote 1 (09:00 – 10:00)
Banquet (19:00 – 21:30)

Wednesday December 4, 2013
Keynote 2 (09:00 – 10:00)

Thursday December 5, 2013
Tutorial (09:00 – 10:00)
SITIS 2013
The 9th International Conference on Signal Image Technologies and Internet Based Systems

The ninth International Conference on Signal-Image Technology & Internet–Based Systems SITIS’13 includes three tracks SIT, WECA and MIRA. The Web Computing and Application track focuses on issues ranging from information modeling and retrieval techniques to novel concepts, architectures and methodologies for interconnecting information systems. The track on Signal & Image Technologies is aimed at recent developments in digital signal processing, evolutions in audiovisual signal processing, analysis, coding and authentication, and retrieval techniques. The third track, titled "Multimedia Information Retrieval and Application (MIRA), is focused on emerging modeling, representation and retrieval techniques that take into account the amount, type and diversity of multimedia information accessible in distributed computing environment. In addition to the main tracks, several workshops are included in this year’s program.

About 350 original submissions were received from around the world. A complete reviewing process was carried out by the different tracks or workshops. Each paper received 2 or 3 reviews, several received up to 5 reviews. Each paper is evaluated based on relevance to track topics, scientific correctness and clarity of presentation. About 150 papers are selected for presentation and publication in the conference proceedings.

Our heartfelt thanks go to those who have greatly contributed in many ways in putting together a fine scientific program and exciting social events for SITIS 2013. We acknowledge the commitment and hard work of the track and workshop chairs who have kept the scientific program in focus and made the discussions interesting and valuable.

We recognize the excellent job done by the program committee members and the extra reviewers. They evaluated all the papers on a very tight schedule. We are grateful for their dedication and contributions. We could not have done it without them. More importantly, we thank the authors for submitting and trusting their work to the conference. Our gratitude to many institutions for their cooperation, support and assistance: the University of Bourgogne, the University of Milan, LE2I laboratory, the Tokyo Denki University.

We thank the General co-chairs, Prof. Ernesto Damiani and Prof. Setsuo Tsuruta for their invaluable and continuing support. Our thanks go to the chair of the local organization committee, Prof. Yoshiyuki Mizuno, and the members of the local organization committee for their help. We express our greatest gratitude to Ms.Yukiko Yamamoto.

We hope that you enjoy the scientific program of SITIS 2013 and that you will take a little time to walk around beautiful Kyoto to bring fond memories back with you. We wish you well.

The steering committee:
Kokou Yetongnon, Albert Dipanda, Ernesto Damiani, Richard Chbeir
Keynotes & Tutorial

Keynote

How can the Big Data Analyses help people affected by the Fukushima Dai-ichi Accident?
by Professor Ryugo S. Hayano
Department of Physics, The University of Tokyo, Japan

Abstract: The Fukushima Dai-ichi nuclear power plant accident dispersed a large amount of radioactive materials, which poses risks of internal and external exposure to the residents. Because the accident broke out in the internet era, large amounts of data were digitally collected. These include radiation-monitor data, tweets, GPS-enabled mobile-phone position data, car navigation data, and so on. Analyses of such “big data” are important to assess the risks of residents and to make plans for countermeasures. On the other hand, there have been many problems regarding the data publication method, and how to archive the collected data. Particular difficulties exist in the handling of personal radiation exposure data, due to the lack of common infrastructure, and more importantly, due to the difficulty in reconciling the data handling with the personal data protection act. I will show several examples of collected and published data, and discuss what we have learned from such data; in particular, it has become clear that the internal exposure level of Fukushima residents is much lower than was initially estimated from the soil contamination level and from the knowledge gained from the Chernobyl accident.

Biography:
Dr. Ryugo Hayano is professor of experimental nuclear physics at the University of Tokyo. His research concerns fundamental symmetries and interactions of nature using the spectroscopy of exotic atoms. He earned his Ph.D from the University of Tokyo in 1979, and he held professorship at the National Laboratory for High Energy Physics (KEK) before returning to Tokyo in 1986. In 2008 he received the Nishina Memorial Prize, the most prestigious physics prize in Japan, for the study of anti protonic helium atoms. He is the spokesperson of ASACUSA collaboration at CERN’s antiproton decelerator facility. Since March 2011, his tweets related to the Fukushima Dai-ichi accident attracted some 150,000 followers; his activities in Fukushima include systematic measurement of school lunch for radio cesium, study of internal exposures using whole body counters, and analyses of GPS-enabled mobile phone data to visualize the flow of people around Fukushima Dai-ichi.
Keynote

Sensing the world: Knowing Events and People’s Opinions using Social Media Analysis

by Akiko Murakami
Knowledge and Infrastructure group at IBM Research-Tokyo, Japan

Abstract:

On 11th March 2011, a 9.0-magnitude mega thrust earthquake occurred in the ocean near Japan. This was the first large scale natural disaster in Japan since the broad adoption of social media tools (such as Facebook and Twitter). Since many people posted their own information to their followers in Twitter at that time, we could know what were happening in various areas from the tweets. Some people also posted tweets with their thought. In general, messages posted in Social Media can be considered as a "sensor" of the world, not only sensing events but also sensing peoples’ opinions. Using Natural Language Processing, Network Analysis and/or other technologies, we can identify events and peoples’ thoughts in the world. In this talk I will show key technologies for social analytics and show some analysis results using these technologies for disaster managements, marketing, etc. I will also show the results of social analytics of candidates’/voters’ activities in the Net for the Japan House of Councilors election in July 2013.

Biography:

Akiko Murakami is currently advisory researcher in Knowledge and Infrastructure group at IBM Research-Tokyo. Ms. Murakami joined IBM in 1999 as a researcher after received a Master's degree in Applied Physics from Waseda University. Ms. Murakami's research interests relate to the Natural Language Processing, especially for analysis of documents and activities in communication systems like Social Networking Services. Ms. Murakami also translated several technical books on Natural Language Processing and Information Retrieval into Japanese. Akiko Murakami is currently advisory researcher in Knowledge and Infrastructure.
A Hardware/Software Prototyping System for Driving Embedded Image Processing Investigations
by Christophe Bobda and Michael Mefenza
CSCE Department, University of Arkansas, Fayetteville, Ar, USA

Abstract:
The tutorial will present a holistic design and verification framework to investigation of image/video processing in embedded environments, with emphasis on system-on-chip architectures. Starting with an executable specification of a target application, subsequent transformations are performed across different levels of abstraction until the final implementation. The hardware/software partitioning is facilitated through the integration of OpenCV and SystemC at design time and OpenCV and Linux in the run-time environment. We built a modular rapid prototyping camera system, the RazorCam, based on FPGA, which allows complex application to be explored at different abstraction level and evaluated in realistic run-time environment. The platform will be used in this tutorial with a couple of designs to demonstrate the viability of our approach

Biography:
Dr. Christophe Bobda is currently associate professor in the department of computer science and computer Engineering at the University of Arkansas in Fayetteville, Ar. Dr. Bobda received the Licence in mathematics from the University of Yaounde, Cameroon, in 1992, the diploma of computer science and the Ph.D. degree (with honors) in computer science from the University of Paderborn in Germany in 1999 and 2003 (In the chair of Prof. Franz J. Rammig) respectively. In June 2003 he joined the department of computer science at the University of Erlangen-Nuremberg in Germany as Post doc, under the direction of Prof. Jürgen Teich. Dr. Bobda received the best dissertation award 2003 from the University of Paderborn for his work on synthesis of reconfigurable systems using temporal partitioning and temporal placement. In 2005. Prior to his position at the University of Arkansas, Dr. Bobda was appointed assistant professor at the University of Kaiserslautern. There he set the chair for Self-Organizing Embedded Systems that he led until October 2007. From 2007 to 2010 Dr. Bobda was Professor at the University of Potsdam and leader of the working Group Computer Engineering. Dr. Bobda is Senior Member of the ACM. He is also in the program committee of several conferences (FPL, FPT, RAW, RSP, ERSA, RECOOSOC, DRS), the DATE executive committee as proceedings chair (2004, 2005, 2006, 2007, 2008, 2009, 2010). He served as reviewer of several journals (IEEE TC, IEEE TVLSI, Elsevier Journal of Microprocessor and Microsystems, Integration the VLSI Journal) and conferences (DAC, DATE, FPL, FPT, SBCCI, RAW, RSP, ERSA), as guest editor of the Elsevier Journal of Microprocessor and Microsystems and member of the editorial board of the Hindawi International Journal of Reconfigurable Computing. Dr. Bobda is the author of one of the first most comprehensive books in the rapidly growing field of Reconfigurable Computing.
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<tr>
<th>Room</th>
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50 High-Frequency Restoration Using Deep Belief Nets for Super-resolution  
Torsa Nakashika, Tetsuya Takiguchi, Yasuo Ariki  
111 Adaptive Multiscale Retinex for Image Contrast Enhancement  
Chang-Hsing Lee, Jau-Ling Shih, Cheng-Chang Lien, Chin-Chuan Han  
117 Analytical Design and Applications of Double-Directional IIR Filters  
Radu Matei  
175 A Hybrid Method for High Density Salt-and-Pepper Noise Removal  
Kohei Inoue, Kenji Hara, Kiichi Urahama |
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Structural properties of complex networks (invited talk)  
José Fernando Mendes.  
54 Evaluating Cerebral Cortex Connectivity with Local Information Algorithm  
Giorgio Gronchi, Andrea Guazzini, Franco Bagnoli, Emanuele Massaro  
75 Toward Community Dynamic through Interactions Prediction in Complex Networks  
Blaise Ngonnnang, Emmanuel Viennet  
191 Network Analysis Improves Interpretation of Affective Physiological Data  
Yuriy Holovaty, Sidney D’Mello, Rafael A. Calvo, Tijana Milenkovic  
70 Structural Network Properties of Niche-Overlay Graphs  
Nayla Sokhn, Richard Baltensperger, Louis-Felix Berrier, Ulrich-Ultes Nitsche, Jean Hennebert  
259 Who Owns Brazil? The Complex Network of Power and Ownership in the Brazilian Market  
Alan Freihof Tygel, Daniel Tygel, Maria Luiza Machado Campo |
| Room 3 (Seminar)| Workshop on Evolutionary Methods for Vision (EVS)  
Chairs: Fumiaki Takeda (Kochi University of Technology), Japan and Rubiyah Yusof (Universiti Teknologi), Malaysia  
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Suryanti Awang, Rubiyah Yusof, Mohammad Fairol Zamzuri, Reza Arfa  
165 Proposal of an Awakening Behavior Detection System for Medical Use and Adaptation for Flourtuation of the Brightness Quantity with Infrared Camera Device Kinect  
Fumiaki Takeda |
169 The Implementation of Ant Clustering Algorithm (ACA) in Clustering and Classifying the Tropical Wood Species
Azlin Ahmad, Rubiyah Yusof
178 Global Path Planning for Autonomous Mobile Robot Using Genetic Algorithm
Masoud Samadi, Mohd Fauzi Othman
197 Stereo Image Sequence Coding Based on Phase Correlation Disparity Estimation
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37 Handwritten Text Recognition for Devanagari Script
Deepi Khanduja, Neeta Nain
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97 A FCM and SURF Based Algorithm for Segmentation of Multispectral Face Images
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105 Two-Stage Recognition for Printed Thai and English Characters Using Nearest Neighbor and Support Vector Machine
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201 Urban Road Network Extraction Based on Zebra Crossing Detection from a Very High Resolution RGB Aerial Image and DSM Data
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119 Ranking Twitter Influence by Combining Network Centrality and Influence Observables in an Evolutionary Model
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171 Modeling Multi-state Diffusion Process in Complex Networks: Theory and Applications
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264 Rumor Dynamics and Inoculation of Nodes in Weighted Scale Free Networks with Degree-Degree Correlation
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44 Network Parameters in Practice: A Case Study Using the Target Set Selection Problem
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90 Secret Hiding Mechanism Using QR Barcode
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Toru Tamaki, Bingzhi Yuan, Bisser Raytchev, Kazufumi Kaneda, Yasuhiro Mukaigawa
56 On a Shape Adaptive Image Ray Transform
Ah-Reum Oh, Mark S. Nixon
187 Proportional Image Enlargement Using Combinations of Scaling and Carving Method
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33 Migration and Trade: A Complex-Network Approach
Giorgio Fagiolo, Marina Mastrorillo
108 Border Sensitive Centralities in Patent Citation Networks Using Asymmetric Random Walks
Greg Morrison, Eleftherios Giovannis, Fabio Pammolli, Massimo Riccoboni
230 The Relation between Global Migration and Trade Networks
Paolo Sgrignoli, Rodolfo Metulini, Stefano Schiavo, Massimo Riccoboni
173 Connectivity and Systemic Risk in the Brazilian National Payments System
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107 Clustering of Japanese Stock Returns by Recursive Modularity Maximization
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101 Accurate Wiener Estimation by Constructing a Similar Training Set Based on Spectral Correlation
Ji-Hoon Yoo, Ho-Gun Ha, Wang-Jun Kyung, Yeong-Ho Ha
296 Estimation of Two Illuminant Spectral Power Distributions from Highlights of Overlapping Illuminants
Nguyen Thuc Dieu Hang, Takahiko Horiuchi, Keita Hirai, Shoji Tominaga
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Tuesday, December 3, 2013

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Sensing the world: Knowing Events and People’s Opinions using Social Media Analysis
by Akiko Murakami
Knowledge and Infrastructure group
IBM Research-Tokyo, Japan

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Web Computing and Applications (WECA)
WECA Session S1
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152 Unsupervised Knowledge Structuring: Application of Infinite Relational Models to the FCA Visualization
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326 An Automated Recognition Technique for Lung Vessel Tree Using Chest Multi-slice CT Images
Hiroshi Hanaizumi

341 Real Time Displacement Measurement of Lattice Pattern Using High Speed Camera
Yasushi Niitsu, Takaaki Iizuka, Osamu Furuya

327 Super-resolution with Adaptive Pixel Weighting Scheme and Its Application to Super-resolved Free-Viewpoint Image Synthesis
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303 Analysis and Modelling of Affective Japanese Sitting Postures
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306 Development of a System to Raise Awareness of Hand Hygiene in Various Environments
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67 Simulation of the Change Acceptance
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334 Analyzing Supermarket Shopping Paths from Indirect Observation and Simulation Study
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B.M. Waller, M.S. Nixon, J.N. Carter
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Sina Firouzi, Chris Joslin
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219 Generative Growth Model for Power Grids
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45 Constrained Switching in Graphs: A Constructive Proof
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C.J. Carstens
49 Influence Neighbourhoods in CiteSeer: A Case Study
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323 Content Repurposing Platform Utilizing Metadata Extracted from Rich Media
Go Kojima
182 Efficient Query Processing of Semantic Data Using Graph Contraction on RDBMS
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221 Kernel Nonnegative Matrix Factorization with Constraint Increasing the Discriminability of Two Classes for the EEG Feature Extraction
Motoki Sakai
225 Development of Lead System for ECG-Derived Respiration Aimed Detection of Obstructive Sleep Apnea Syndrome
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220 Reliability Analysis of Interdependent Networks Using Percolation Theory
Qiong Zhang, Daqing Li, Rui Kang, Enrico Zio, Peng Zhang
30 Overload Network Failures: An Approach from the Random-Walk Model
Shogo Mizutaka, Kousuke Yakubo
176 Ergodic Properties of Urban Street Networks in the UK
A. Paolo Masucci, Kiril Stanilov, Elsa Arcaute, Erez Hatna, Michael Batty
122 Determining and Understanding Dynamically Important Differences between Complex Networks Using Reliability-Induced Structural Motifs
Stephen Eubank, Mina Youssef, Yasamin Khorramzadeh
64 Analysis on Critical Nodes in Controlling Complex Networks Using Dominating Sets
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Tuesday, December 2, 2013 --- 16:30-18:30
Wednesday, December 4, 2013

9:00 - 10:00 Keynote 2 (Room 1, 2, 3)
How can the Big Data Analyses help people affected by the Fukushima Dai-ichi Accident?
by Professor Ryugo S. Hayano
Department of Physics, The University of Tokyo, Japan

Wednesday, December 4, 2013 --- 10:30-12:30

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65 Measurement of Size and Distance of Objects Using Mobile Devices
Suraphol Laotrakunchai, Akarapas Wongkaew; Karn Patanukhom

136 A Negative Sample Image Selection Method Referring to Semantic Hierarchical Structure for Image Annotation
Shan-Bin Chan, Hayato Yamana, Shin'ichi Satoh

213 A New Image Sharing Scheme for Internet Applications in Adverse Environments
Chin-Pan Huang, Ping S. Huang, Shih-Yu Huang

247 Identity Recognition through Human Gaze Tracking
Ignazio Infantino, Giuseppe Scardino, Filippo Vella

262 Internet-Vision Based Vehicle Model Query System Using Eigenfaces and Pyramid of Histogram of Oriented Gradients
Thitiphat Anakavej, Aram Kawewong, Karn Patanukhom

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Tsuneo Ohsumi

156 Evacuation Guidance System Using Everyday Use Smartphones
Takaya Wada, Tomoichi Takahashi

242 A Wireless LAN Usage Trends Survey on Campus for Evacuation Planning
Kensuke Miyashita

252 Road Distance Traveled by Vehicles Following the 2011 Tohoku Earthquake, Calculated by G-BOOK Telematics Data
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Takumi Sonoda, Takao Miura  
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Kurie Nakamura, Andrea Kutics, Akihiko Nakagawa  
313 Exploring Social Cognition Related to Privacy Settings in SNS Usage  
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174 Web-Based QoE Measurement Framework  
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Makoto Shishido  
298 Context-Aware Recommendation System Using Content Based Image Retrieval with Dynamic Context Considered  
Yuta Miyazawa, Yukiko Yamamoto, Takashi Kawabe  
324 SNAPPER: Fashion Coordinate Image Retrieval System  
Shinya Miura, Toshihiko Yamasaki, Kiyoharu Aizawa  
325 A Tracking Method for 2D Canvas in MR-Based Interactive Painting System  
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283 The Japanese OTAKUs' One Month Activity Just after the 3.11 Earthquake
Ketaro Okuno

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6 Smartweet: A Location-Based Smart Application for Exhibits and Museums
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Thursday, December 5, 2013
8:45 – 12:30

A Hardware/Software Prototyping System for Driving Embedded Image Processing Investigations
by Christophe Bobda and Michael Mefenza
CSCE Department, University of Arkansas, Fayetteville, Ar, USA

9:00 -10:00 Tutorial (Rooms 2, 3 )
A Hardware/Software Prototyping System for Driving Embedded Image Processing Investigations
by Christophe Bobda and Michael Mefenza
CSCE Department, University of Arkansas, Fayetteville, Ar, USA

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Guangbing Yang, Kinshuk, Dunwei Wen, Erkki Sutinen
317 To Develop the Virtual Physics Laboratory by Integrating Kinect with Gesture Classification Algorithm
164 Towards the Research of Possible Assessment Tools for Associative Learning Skills
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Walter W. Ridgewell, Vive Kumar, Kinshuk

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209 Color Image Quality Assessment Measure Using Multivariate Generalized Gaussian Distribution
Mounir Omari, Abdelkader Ait Abdelouahad, Mohammed El_Hassouni, Hocine Cherifi

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Sina Firouzi, Chris Joslin

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329 Settings of Access Control by Detecting Privacy Leaks in SNS
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Room 3 (Seminar)

Farewell and looking forward to meeting you @ SITIS2014
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8:45 – 10:00

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