# Contents

# Chair's Welcome Message

On behalf of the conference committees, it is our great pleasure to welcome you to the Third KES International Conference on Innovation in Medicine and Healthcare (InMed-15), which will be held on 11-12 September 2015 in Kyoto, Japan, organized by KES International and co-organized by Research Center of Advanced ICT for Medical and Healthcare, Ritsumeikan University, Japan.

The InMed-15 is the third edition of the InMed series of conferences. The first and the second InMed Conferences were held in Greece and Spain, respectively. The InMed-15 is the first conference that is held outside of European countries. Innovation in medicine and healthcare is an interdisciplinary research area, which combines the advanced technologies and problem solving skills with medical and biological science. A central theme of this proceedings is Smart Medical and Healthcare Systems (modern intelligent systems for medicine and healthcare), which can provide efficient and accurate solutions to problems faced by healthcare and medical practitioners today by using advanced information communication techniques, computational intelligence, mathematics, robotics and other advanced technologies. The techniques developed in this area will have a significant effect on future medicine and healthcare. The purpose of the conference is to exchange new ideas, new technologies and current research results in these research fields. In this conference, we will have 53 oral presentations by researchers and graduate students. We hope that the workshop is not only successful in the scientific sense but also in the enhancement of friendship and research collaboration.

   Thanks are due to the Ritsumeikan University for hosting the event, to the keynote speakers, session chairs, authors, reviewers. We wish to show our appreciation to the KES Secretariat staff for their organization. Finally, we would like to thank you for your participation and hope that you will find the InMed-15 to be a memorable experience.

**Conference Chairs**:-
Yen-Wei Chen (Ritsumeikan University, Japan),
Robert J. Howlett (Bournemouth University, UK),
Shigehiro Morikawa (Shiga University of Medical University, Japan) and
Lakhmi C. Jain (University of Canberra and University of South Australia Australia)

# Organisation

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Lakhmi C. Jain          University of South Australia, Australia

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**Organization and Management**
**KES International** (www.kesinternational.org)
in partnership with
**Ritsumeikan University**, Japan (www.ritsumei.jp)
and
the **Institute of Knowledge Transfer** (www.ikt.org.uk)

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| Hiro Yoshida | Massachusetts General Hospital & Radiology, Harvard Medical School |
| Haoxi Zhang | University of Newcastle, Australia |

# Keynote Speakers

## Miguel A. Gonzalez Ballester

ICREA - Universitat Pompeu Fabra, Barcelona, Spain

### *From medical imaging to digital patients and robotic surgeons*

**Abstract**: Modern medical imaging technologies make it possible to explore the human body in a multitude of ways, depicting anatomy, metabolic function and pathological processes. Innovations in medical imaging have been paralleled by the development of computer-based image processing methods to automatically detect and diagnose pathologies, quantify disease progression and assess possible risks and complications when planning a surgical intervention. Computer support for treatment planning is not limited to image processing (filtering, segmentation, registration), but also includes artificial intelligence (decision support systems), mathematical and computational models (finite element simulations) and hardware (tracking and guidance systems, mechatronic and robotic tools). All these tools can be combined to assist and guide the surgeon in the operating room.

In this talk, we will see examples of these techniques applied to orthopaedics, heart failure, cochlear implants and foetal surgery.

**Biography**: Prof. Miguel A. Gonzalez Ballester holds a Computer Engineering degree from Univeristat Jaume I, Spain, and a doctoral degree from the University of Oxford, UK (2000). His doctorate, under supervision of Sir Michael Brady and Prof. Andrew Zisserman, focused on the analysis of brain MRI data for multiple sclerosis and schizophrenia. He was awarded the prestigious Toshiba Research Fellowship and worked for two years as a senior researcher at Toshiba Medical Systems Japan, where he developed novel, patented systems for MRI parallel imaging. In late 2001 he obtained a faculty position at INRIA (Sophia Antipolis, France), where he led research projects on medical image analysis and mathematical modelling. In 2004 he joined the University of Bern (Switzerland), as head of the medical image analysis group, and later became head of the surgical technology division, working on medical image analysis, computer-assisted surgery, and surgical robotics. From 2008 he was in charge of the Research Department at the company Alma IT Systems S.L. in Barcelona (Spain), leading the development of software for diagnosis and surgical planning. In October 2013 he was awarded an ICREA Senior Research Professorship, and joined the Department of Information and Communication Technologies at UPF.
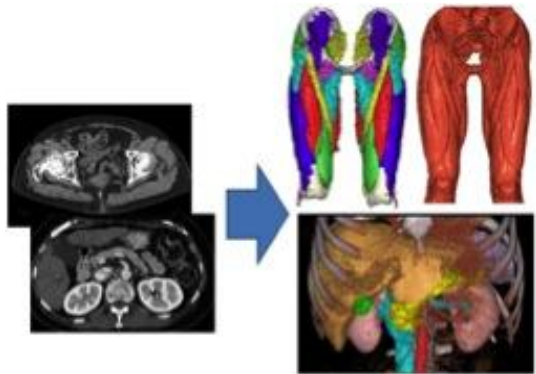
**Yoshinobu Sato**
Nara Institute of Science and Technology (NAIST), Japan

*Multidisciplinary Computational Anatomy for Medical Image Analysis: From Shape to Function and Pathology*

**Abstract**: Computational anatomy models statistically represent inter-subject variability of human anatomy including individual organ shapes and their interrelations. These models are regarded as prior probabilities of human anatomy and can be utilized for Bayesian estimation problems related to anatomical identification. This talk presents medical image analysis of the abdominal organs and musculoskeletal structures using the computational anatomy models. In addition, multidisciplinary extensions of computational anatomy will be discussed especially on integration of organ function and pathology.

**Biography**: Yoshinobu Sato received his B.S., M.S. and Ph.D degrees in Information and Computer Sciences from Osaka University, Japan in 1982, 1984, 1988 respectively. From 1988 to 1992, he was a Research Engineer at the NTT Human Interface Laboratories. In 1992, he joined the Division of Functional Diagnostic Imaging of Osaka University Medical School as a faculty member. From 1996 to 1997, he was a Research Fellow in the Surgical Planning Laboratory, Harvard Medical School and Brigham and Women's Hospital. He is currently a Professor at Nara Institute of Science and Technology. His research fields include medical image analysis, computer assisted surgery, and computational anatomy. Dr. Sato served as MICCAI 2013 Program Chair. He is a member of IEEE, MICCAI, and CAOS-International, and an editorial board member of the Medical Image Analysis journal and the International Journal of Computer Assisted Radiology and Surgery.

**Hiromi Tanaka**
College of Information Science and Engineering, Ritsumeikan University, Japan

*Towards Anywhere at Anytime Hands-on Surgery Training - Haptic Collaborative Virtual Environment Technology and Medical Application*

**Abstract**: Laparoscopic surgery, called minimally invasive surgery(MIS), has become a common surgical technique with a number of advantages to patients over open surgery, such as reduced hemorrhaging, smaller incision, less pain and shorter recovery time etc.,. However, MIS requires advanced surgical techniques difficult to master for trainee-doctors, because of the limited field of view with an endoscope and poor force sensation from surgical instruments such as forceps. This talk represents "one to many" & "hands on hands" remote MIS training system with VR surgery simulator, towards anywhere at anytime hands-on MIS training. The remote MIS training system is based on advanced ICT called Multi-User & Multi-points Haptic Collaborative Virtual Environment (MMHCVE), which allows multiple participants at remote sites on the network to simultaneously interact with the same target soft tissue with haptic force sensation in virtual environments, by only exchanging a small set of manipulation parameters for the target soft tissue.

**Biography**: Hiromi T. Tanaka received her B.S. degree in physics from Ochanomizu Woman University in 1975, M.S. degree in computer science from the University of Rochester in 1982, and Doctor of Engineering degree from Osaka University in 1988. From 1988 to 1994, she was a research scientist at ATR (Advanced Telecommunication Research Institute). In 1994, she joined the Ritsumeikan University as a full professor. Her research interest is in the areas of CV, CG, VR, haptic communication etc. She has headed many government-commissioned national leading research projects; "Volume-based Haptic Communication with realistic sensation(2004-2007)" and "Multi-users & Multi-points HCVE for Remote Surgery Training(2011-2014) " under MIC (Ministry of Internal Affairs and Communications), "Haptic Collaborative Virtual Environment Towards "Anywhere Advanced Medicine

(2010-2013) " under NICT(National Institute of Information and Communications Technology), "Digital Museum of "KYOTO Arts & Entertainments (2009-2014) " under MEXT (Ministry of Education, Culture. Sports, Science and Technology). She is a member of The Science Council of Japan (SCJ), IEEE and ACM.

## Conference Schedule

**Thursday 10 September 2015**

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| 17:30 | Welcome Reception (1$^{st}$ Floor, Room B) |

**Friday 11 September 2015**

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| 8.30 | **Registration** |
| 9.15 - 9.30 | **Conference Opening and Welcome** (Room A) |
| 9.30 - 10.30 | **Invited Keynote Talk 1** (Room A) |
| | Prof. Hiromi T. Tanaka, Ritsumeikan University, Japan |
| | Towards Anywhere at Anytime Hands-on Surgery Training - Haptic Collaborative Virtual Environment Technology and Medical Application |
| | Chair: Prof Nobutaka Shimada, Ritsumeikan University, Japan |
| 10.30 - 10.45 | Coffee |
| 10.45 - 12.00 | **Oral Paper Presentation Session IS04** (Room A) |
| | Emerging Research Leaders of Medical Informatics in KANSAI Area (4 Papers) |
| | Chair: Prof. Tomohiko Kuroda, Kyoto University Hospital, Japan |
| | **Oral Paper Presentation Session IS09** (Room B) |
| | Simulation and Visualisation/VR for Medicine (5 Papers) |
| | Prof. Satoshi Tanaka, Ritsumeikan University, Japan |
| 12.00 - 13.30 | **Lunch** |
| 13.30 - 14:30 | **Invited Keynote Talk 2** (Room A) |
| | Prof. Yoshinobu Sato, Nara Institute of Science and Technology (NAIST), Japan |
| | Multidisciplinary Computational Anatomy for Medical Image Analysis: From Shape to Function and Pathology |
| | Chair: Prof Yen-Wei Chen, Ritsumeikan University, Japan |
| 14.30 - 14.45 | **Coffee** |
| 14.45 - 16:00 | **Oral Paper Presentation Session IS08-1** (Room A) |
| | Advanced ICT for medical and Healthcare 1 (5 Papers) |
| | Chair: Prof. Yen-Wei Chen, Ritsumeikan University, Japan |
| | **Oral Paper Presentation Session GT-1** (Room B) |
| | Healthcare Support System 1 (4 Papers) |
| | Chair: Prof. Satoshi Tanaka, Ritsumeikan University, Japan |
| 16.00 - 16.15 | **Coffee** |
| 16.15 - 17.30 | **Oral Paper Presentation Session IS08-2** (Room A) |
| | Advanced ICT for medical and Healthcare 2 |
| | Chair: Prof. Xian-Hua Han, Ritsumeikan University, Japan |
| | (5 Papers) |
| | **Oral Paper Presentation Session GT-2** (Room B) |
| | Healthcare Support System 2 (3 Papers) |
| | Chair: Dr. Rui Xu, Ritsumeikan University, Japan |
| 19:00 | **Banquet** (Japanese Restaurant GANKO) |

**Saturday 12 September 2015**

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| 9.30 - 11.00 | **Smart Medical and Healthcare System 2015 Workshop** (Room A) (6 Papers) |
| | Chairs: Dr Eider Sanchez, Vicomtech-IK4, Spain and Dr Ivan Macia, Vicomtech-IK4, Spain |
| | **Oral Paper Presentation Session IS05** (Room B) |
| | Biomedical Engineering, Trends, Research and Technologies (6 Papers) |
| | Chair: Dr. Lenin G. Lemus-Zúñiga, Universitat Politècnica de València. España |
| 11.00 - 11.15 | **Coffee** |
| 11.15 - 12.15 | **Invited Keynote Talk 3** (Room A) |
| | Prof. Miguel A. Gonzalez Ballester, ICREA - Universitat Pompeu Fabra, Barcelona, Spain |
| | From Medical Imaging to Digital Patients and Robotic Surgeons |
| | Chair: Dr Ivan Macia, Vicomtech-IK4, Spain |
| 12.15 - 13.45 | **Lunch** |
| 13.45 - 14.45 | **Oral Paper Presentation Session IS12** (Room A) |
| | Statistical Signal Processing and Artificial Intelligence (3 Papers) |
| | Chair: Prof. Juan M. Górriz, University of Granada, Spain |
| | **Oral Paper Presentation Session IS06-1** (Room B) |
| | Management for Healthcare 1 (4 Papers) |
| | Chair: Prof Yoshiyuki Yabuuchi, Shimonoseki City University, Japan |
| 14.45 - 15.00 | **Coffee** |
| 15.00 - 16.00 | **Oral Paper Presentation Session GT-3** (Room A) |
| | Healthcare Support System 3 (4 Papers) |
| | Chair: Prof. Jooho Lee, Ritsumeikan University, Japan |
| | **Oral Paper Presentation Session IS06-2** (Room B) |
| | Management for Healthcare 2 (4 Papers) |
| | Chair: Prof. Yoshiyuki Matsumoto, Shimonoseki City University, Japan |
| 16.00 - 16.15 | **Closing Ceremony** |

# Paper Presentations

*Session IS04: Emerging Research Leaders of Medical Informatics in KANSAI Area*
*Chair: Prof Tomohiko Kuroda*

**Prediction of Clinical Practices by Clinical Data of the previous day using Linear Support Vector Machine**
*Takashi Nakai, Tadamasa Takemura, Risa Sakurai, Kenichiro Fujita, Kazuya Okamoto, Tomohiro Kuroda*

**Method for Detecting Drug-Induced Interstitial Pneumonia from Accumulated Medical Record Data at a Hospital**
*Yoshie Shimai, Toshihiro Takeda, Shirou Manabe, Kei Teramoto, Naoki Mihara, Yasushi Matsumura*

**Visualization and Quantitative Analysis of Nursing Staff Trajectories Based on a Location System**
*Kikue Sato, Tomohiro Kuroda, Akitoshi Seiyama*

**A Web-Based Stroke Education Application for Older Elementary Schoolchildren Focusing on the FAST Message**
*Shoko Tani, Hiroshi Narazaki, Yuta Ueda, Yuji Nakamura, Tenyu Hino, Satoshi Ohyama, Shinya Tomari, Chiaki Yokota, Naoki Ohboshi, Kazuo Minematsu, Kazuo Nakazawa*

*Session IS09: Simulation and Visualisation/VR for Medicine*
*Chair: Prof Satoshi Tanaka*

**GPU Acceleration of Monte Carlo Simulation at the Cellular and DNA Levels**
*Shogo Okada, Koichi Murakami, Katsuya Amako, Takashi Sasaki, Sébastien Incerti, Mathieu Karamitros, Nick Henderson, Margot Gerritsen, Makoto Asai, Andrea Dotti*

**A Study on Corotated Nonlinear Deformation Model for Simulating Soft Tissue under Large Deformation**
*Kazuyoshi Tagawa, Takahiro Yamada, Hiromi T. Tanaka*

**Remote Transparent Visualization of Surface-Volume Fused Data to Support Network-Based Laparoscopic Surgery Simulation**
*Rui Xu, Asuka Sugiyama, Kyoko Hasegawa, Kazuyoshi Tagawa, Satoshi Tanaka, Hiromi T. Tanaka*

**Study of Surgical Simulation of Flatfoot Using a Finite Element Model**
*Zhongkui Wang, Kan Imai, Masamitsu Kido, Kazuya Ikoma, Shinichi Hirai*

**A Study of Meditation Effectiveness for Virtual Reality based Stress Therapy using EEG Measurement and Questionnaire Approaches**
*Gamini Perhakaran, Azmi Mohd Yusof, Mohd Ezanee Rusli, Mohd Zaliman Mohd Yusoff, Imran Mahalil, Ahmad Redza Razieff Zainuddin*

*Session IS08-1: Advanced ICT for medical and Healthcare 1*
*Chair: Prof Yen-Wei Chen*

**Coccurrence Statistics of Local Ternary Patterns for HEp-2 Cell Classification**
*Xian-Hua Han, Yen-Wei Chen, Gang Xu*

**Combined Density, Texture and Shape Features of Multi-Phase Contrast-Enhanced CT Images for CBIR of Focal Liver Lesions: A Preliminary Study**
*Yingying Xu, Lanfen Lin, Hongjie Hu, Huajun Yu, Chongwu Jin, Jian Wang, Xianhua Han, Yen-Wei Chen*

**Supporting Nurses' Work and Improving Medical Safety Using a Sensor Network System in Hospitals**
*Misa Esashi, Haruo Noma, Tomohiro Kuroda*

**Eye-Hand Coordination Analysis According to Surgical Process in Laparoscopic Surgery Training**
*Takafumi Marutani, Hiromi T. tanaka, Nobutaka Shimada, Masaru Komori, Yoshimasa Kurumi, Shigehiro Morikawa*

**An Improvement of Surgical Phase Detection Using Latent Dirichlet Allocation and Hidden Markov Model**
*Dinh Tuan Tran, Ryuhei Sakurai, Joo-Ho Lee*

*Session IS08-2: Advanced ICT for medical and Healthcare 2*
*Chair: Prof Xian-Hua Han*

**Implementing a Human-Behavior-Process Archive and Search Database System Using Simulated Surgery Processes**
*Zhang Zuo, Kenta Oku, Kyoji Kawagoe*

**Unobtrusive Sensing of Human Vital Functions by a Sensory Unit in the Refrigerator Door Handle**
*D. Zazula, S. Srkoč, B. Cigale*

**Measurement of 3-D Workspace of Thumb Tip with RGB-D Sensor for Quantitative Rehabilitation**
*Tadashi Matsuo, Nobutaka Shimada*

**Automatic Segmentation Method for Kidney Using Dual Direction Adaptive Diffusion Flow**
*Xu Qiao, Wujing Lu, Xuantao Su, Yen-Wei Chen*

**Automatic Registration of Deformable Organs in Medical Volume Data by Exhaustive Search**
*Masahiro Isobe, Shota Niga, Kei Ito, Xian-Hua Han, Yen-Wei Chen, Gang Xu*

*Session GT-1: Healthcare Support System 1*
*Chair: Prof Satoshi Tanaka*

**A Benchmark on Artificial Intelligence Techniques for Automatic Chronic Respiratory Diseases Risk Classification**
*Sebastian A. Rios, Fabian Garcia Tenorio, Angel Jimenez-Molina*

**Toward Non-invasive Polysomnograms Through the Study of Electroencephalographic Signal Correlation for Remotely Monitored Cloud-based Systems**
*Claudio Estevez, Diego Vallejos, Sebastian Rios, Pablo Brockmann*

**Work with Iodine-125: 8 Years Experience in Brachytherapy Sources Production Lab**
*C. D. Souza, F. S. Peleias Jr., M.E.C.M. Rostelato, C.A. Zeituni, R. Tiezzi, B.T. Rodrigues, A. Feher, J.A. Moura, O.L. Costa*

**Comprehensible Video Acquisition for Caregiving Scenes -- How Multimedia can Support Caregiver Training**
*Yuichi Nakamura, Kazuaki Kondo, Taiki Mashimo, Yoshiaki Matsuoka, Tomotake Ohtsuka*

*Session GT-2: Healthcare Support System 2*
*Chair: Dr Rui Xu*

**Care at the End of Life: Design Priorities for People with Dementia**
*Alastair S. Macdonald, Louise Robinson*

**A Wireless and Autonomous Sensing System for Monitoring of Chronic Wounds in Healthcare**
*Alex Hariz, Nasir Mehmood*

**Maturity Models for Hospital Information Systems Management: Are they Mature?**
*João Vidal de Carvalho, Álvaro Rocha, José Braga de Vasconcelos*

*Session GT-3: Healthcare Support System 3*
*Chair: Prof Jooho Lee*

**Why Cannot Control Your Smartphones by Thinking? Hands-free Information Control System based on EEG**
*Yuanyuan Wang, Tomoki Hidaka, Yukiko Kawai, Jiro Okuda*

**Comparative Analysis of Retinal Fundus Images with the Distant Past Images Using a Vessel Extraction Technique**
*Toshio Modegi, Yoichi Takahashi, Tae Yokoi, Muka Moriyama, Noriaki Shimada, Ikuo Morita, Kyoko Ohno-Matsui*

**Interactive Segmentation of Pancreases from Abdominal CT Images by Use of the Graph Cut Technique with Probabilistic Atlases**
*Takenobu Suzuki, Hotaka Takizawa, Hiroyuki Kudo, Toshiyuki Okada*

**Validation of Knot-Tying Motion by Temporal-Spatial Matching with RGB-D Sensor for Surgical Training**
*Yoko Ogawa, Nobutaka Shimada, Yoshiaki Shirai, Yoshimasa Kurumi, Masaru Komori*

*Smart Medical and Healthcare System 2015 Workshop*
*Chairs: Dr Eider Sanchez, Vicomtech-IK4, Spain*
    *Dr Ivan Macia, Vicomtech-IK4, Spain*

**Integrating Electronic Health Records in Clinical Decision Support Systems**
*Eider Sanchez, Carlos Toro, Manuel Graña*

**An Ad-Hoc Image Segmentation of Subcutaneous and Visceral Adipose Tissue from Abdomino-Pelvic Magnetic Resonance Images**
*Oier Echaniz, Borja Ayerdi, Alexandre Savio, Manuel Graña*

**Automated Segmentation of Subcutaneous and Visceral Adipose Tissues from MRI**
*Borja Ayerdi, Oier Echaniz, Alexandre Savio, Manuel Graña*

**Enabling a Smart and Distributed Communication Infrastructure in Healthcare**
*Chrystinne Oliveira Fernandes, Carlos José Pereira de Lucena, Carlos Alberto Pereira de Lucena, Bruno Alvares de Azevedo*

**Ultrasound Image Dataset for Image Analysis Algorithms Evaluation**
*Camilo Cortes, Luis Kabongo, Ivan Macia, Oscar E. Ruiz and Julian Florez*

**Approaches of Phase Lag Index to EEG Signals in Alzheimer's disease from Complex Network Analysis**
*Shinya Kasakawa, Teruya Yamanishi, Tetsuya Takahashi, Kanji Ueno, Mitsuru Kikuchi, Haruhiko Nishimura*

*Session IS05: Biomedical Engineering, Trends, Research and Technologies*
*Chair: Dr Lenin G. Lemus-Zúñiga*

**A Review of Mobile Apps for Improving Quality of Life of Asthmatic and People with Allergies**
*Miguel A. Mateo Pla, Lenin G. Lemus-Zúñiga, José-Miguel Montañana, Julio Pons , Arnulfo Alanis Garza*

**Physical Implementation of a Customisable System to Assist a User with Mobility Problems**
*Sandra López, Rosario Baltazar, Miguel Ángel Casillas, Víctor Zamudio, Juan Francisco Mosiño, Arnulfo Alanis2, Guillermo Méndez*

**Mobile Applications in Health, Competitive Advantage in the State of Baja California Mexico**
*Nora del Carmen Osuna Millán, Margarita Ramírez Ramírez, María del Consuelo Salgado Soto, María del Consuelo Salgado Soto, Bogart Yali Márquez Lobato, Arnulfo Alanís Garza*

**Mental Activation of Seniors Incorporating ICT in Their Daily Lives**
*Maricela Sevilla Caro, María del Consuelo Salgado Soto, Margarita Ramírez Ramírez, Esperanza Manrique Rojas, Hilda Beatriz Ramírez Moreno, Lenin G Lemus Zúñiga*

**Quality of Life and Active Aging Through Educational Gerontology in Information Technology and Communication**
*Esperanza Manrique Rojas, Hilda Beatriz Ramírez Moreno, Margarita Ramírez Ramirez, Nora del Carmen Osuna Millan,  Arnulfo Alanís Garza, José Sergio Magdaleno Palencia*

**Simulation of Cervical Cord Compression using Finite Element Method (FEM)**
*Nur Fadhlina Binti Shaari, Junji Ohgi, Norihiro Nishida, Xian Chen, Itsuo Sakuramoto, Toshihiko Taguch*

*Session IS12: Statistical Signal Processing and Artificial Intelligence*
*Chair: Prof Juan M. Górriz*

**Late Onset Bipolar Disorder versus Alzheimer Disease**
*Darya Chyzhyk, Marina Graña-Lecuona, Manuel Graña*

**Short-Term Prediction of MCI to AD Conversion Based on Longitudinal MRI Analysis and Neuropsychological Tests**
*Javier Ramírez, Carlos G. Puntonet, Juan Manuel Górriz, María Ruz*

**Ensemble Tree Learning Techniques for Magnetic Resonance Image Analysis**
*J. Ramírez, J. M. Górriz, A. Ortiz, P. Padilla, F.J. Martínez-Murcia*

*Session IS06-1: Management for Healthcare 1*
*Chair: Prof Yoshiyuki Yabuuchi*

**A Study of older People's Socializing Form with Others: Comparative Analysis of "Living alone" and "Living with a spouse" using Quantification Theory Type II**
*Takayuki Kawaura, Yasuyuki Sugatani*

**Analysis of Japanese Health using Fuzzy Principal Component Analysis**
*Yoshiyuki Yabuuchi, Takayuki Kawaura*

**Analysis of Time-Series Data Using the Rough Set**
*Yoshiyuki Matsumoto, Junzo Watada*

**Study on Multi-Period Transportation Problem Considering Opportunity Loss and Inventory**
*Shinichiro Ataka, Hisayoshi Horioka*

*Session IS06-2: Management for Healthcare 2*
*Chair: Prof Yoshiyuki Matsumoto*

**Diagnosis OF ECG Data for Detecting Cardiac Disorder Using DP-Matching and Artificial Neural Network**
*Mohamad Sabri bin Sinal, Eiji Kamioka*

**Smart Technology for a Smarter Patient: Sketching the Patient 2.0 Profile**
*Luca Buccoliero, Elena Bellio, Maria Mazzola, Elisa Solinas*

**Construction and Evaluation of Bayesian Networks Related to the Specific Health Checkup and Guidance on Metabolic Syndrome**
*Yoshiaki Miyauchi, Haruhiko Nishimura*

**Medical care delivery at the XXVII World Summer Universiade Kazan 2013**
*Timur Mishakin, Elena Razumovskaya, Michael Popov, Olga Berdnikova*

## Conference Venue

Suzaku Campus, Ritsumeikan University
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