KES International

KES International Conference on Innovation in Medicine and Healthcare

http://inmed14.innovationkt.org

Conference Program

San Sebastian, Spain
9-11 July 2014

XXXIII Cursos de Verano
Uda Ikastaroak
XXVI Cursos Europeos
Europar Ikastaroak

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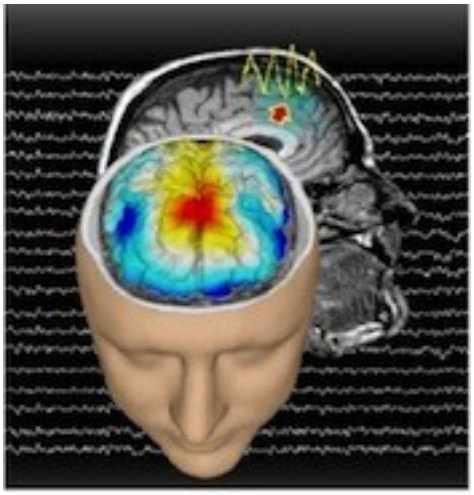
UPV EHU

Contents

PREFACE

The **KES International Conference on Innovation in Medicine and Healthcare** (InMed-14) will gather a multi-disciplinary group consisting of researchers and engineers, managers, students and practitioners from the medical arena, to discuss the ways that innovation, knowledge exchange and enterprise can be applied to issues relating to medicine, surgery, healthcare and the issues of an ageing population.

A central theme of the conference will be **Smart Medical and Healthcare Systems** which will cover the ways in which modern intelligent systems contribute to the solution of problems faced by healthcare and medical practitioners today, addressing the application of these systems through all of the strands of the event.



Innovation in Medicine & Healthcare is a conference covering innovative approaches to meeting the needs of both practitioners and patients internationally. Selected works include the following topics:

- Smart medical devices & systems
- Innovation in Regenerative Medicine
- Gene Therapy
- Sensors
- Medical Diagnostics and Biomarkers
- Service Delivery
- Technology Enabled Healthcare Services
- Advanced Medical Materials Technology
- Telehealth
- Reglatory frameworks for new technology

ORGANISATION

General Co-chairs

- **Manuel de Graña**, University of the Basque Country, UPV/EHU, Spain

- **Lakhmi C. Jain**, University of South Australia

Executive Chair

- **Robert J Howlett**, Bournemouth University, UK

Chair of Workshop on Smart Medical and Healthcare Systems

- **Carlos Toro**, Vicomtech-IK4

Organisation and Management

- **Innovation through Knowledge Transfer** is organised and managed by **KES International** (www.kesinternational.org) in partnership with **the Institute of Knowledge Transfer** (www.ikt.org.uk)

USEFUL INFORMATION

WiFi Access

Network is free access at Miramar Palace.

Useful phone numbers

The international phone number prefix for Spain is +34

Emergency call number	112
Taxi service	+34 943 46 46 46 (Mobile app, Android/iOS) http://www.taxidonosti.com/en/joinup-taxi/
Bus timetables (PESA company)	http://www.pesa.net/pesa/horariosBD/ctrl_horarios.php

Conference local contact:

Borja Ayerdi,
borja.ayerdi@ehu.es
+34 639 28 55 49

PLENARY SPEAKERS

Edward J. Ciaccio

Columbia University, NY

Date: Thursday 10th July 2014
Hour: 12:00-13:00
Room: Pabellón de servicios
Chair: Manuel Graña

BIOGRAPHY

Edward J. Ciaccio Ph.D. is a senior research scientist in the Department of Medicine - Division of Cardiology at Columbia University Medical Center in New York City, which he joined in 2010. Dr. Ciaccio also works part-time for the Celiac Disease Center at Columbia University Medical Center. He was staff and research faculty with the Department of Pharmacology, Columbia University Medical Center from 1990 - 2010. He also taught as an adjunct assistant professor in the Department of Biomedical Engineering, Columbia University from 1996 - 2006.
Dr. Ciaccio's research expertise includes biosignal analysis (cardiac electrophysiology), and bioimage analysis (video capsule studies for celiac disease). His group has developed a new spectral estimator and transform for the analysis of biomedical data. These quantitative methods have been used to detect dominant frequency components and dominant time-series patterns in atrial fibrillation and ventricular tachycardia electrograms. This work also includes the implementation of a real-time spectral estimator. Dr. Ciaccio's group has developed models to explain electrogram fractionation and functional electrical conduction block in postinfarction hearts. In the area of computer hardware, the group has designed a fast data acquisition and electrical activation mapping system with multichannel inputs.

Dr. Ciaccio has received an Established Investigator Award from the American Heart Association (1998) and a Paper of the Year Award from

Heart Rhythm Journal (2008). He became editor-in-chief of Computers in Biology and Medicine in January 2013. He is also an editorial board member for BioMedical Engineering OnLine, Heart Rhythm, Journal of Cardiovascular Electrophysiology, World Journal of Gastroenterology, and World Journal of Gastrointestinal Endoscopy. Dr. Ciaccio reviews for over 30 scientific journals and has published over 80 peer-reviewed articles in his field. His current research focus includes the development of a wavefront curvature model of reentrant ventricular tachycardia.

TITLE

Model of Reentrant Ventricular Tachycardia based on Wavefront Curvature

ABSTRACT

Ventricular tachycardia is one of the most common heart arrhythmias, and without treatment it can lead to disability or cardiac arrest. The cause of the tachycardia is often a double-loop reentrant circuit, in which two activation wavefronts propagate simultaneously around a common isthmus. Currently, radiofrequency catheter ablation is used to target the arrhythmogenic region of reentrant ventricular tachycardia with minimal invasiveness during electrophysiologic study. However, correct targeting is not always possible due to the difficulty in identifying the arrhythmogenic regions responsible for all clinical tachycardias that may occur in a particular patient, and because of hemodynamic compromise which prevents successful mapping of the heart surface for some or all clinically relevant tachycardias. If a method could be devised to detect arrhythmogenic regions in the heart during electrophysiologic examination without the need for tachycardia induction, or at least without the need for extensive mapping during tachycardia, it could go a long way toward the successful treatment of these patients, as well as to reduce the fluoroscopy time needed for evaluation.

We have devised a model to explain electrogram fractionation and functional electrical conduction block in the postinfarction heart based on activation wavefront curvature. When the activation wavefront travels without impediment, its leading edge is linear in shape and it travels at approximately 0.5 millimeters per millisecond. However, when it encounters a sharp change from lesser to greater conducting volume during propagation, the wavefront becomes convex and slows, due to the relative reduction in available current to activate distal viable tissue. Under certain conditions this can lead to very slow conduction or functional block. We have identified these conditions as occurring at lateral boundaries present on either side of the isthmus of the reentrant

circuit. At these locations, there is a sharp change from very thin to thicker infarct border zone, which is the region of surviving myocardial cells between infarct and heart surface. A reentrant circuit loop travels around each lateral boundary during tachycardia. Furthermore, because of the variability in thin-to-thick infarct border zone at the lateral boundaries, the model shows that the electrical activation wavefront can become discontinuous there and result in electrogram fractionation, which is a reduced amplitude signal with multiple random deflections. By targeting ablation energy across the lateral boundaries, it would be possibly to prevent reinduction of tachycardia, including those clinical tachycardias that are not readily mappable by current methods.

In our most recent work, we show how wavefront curvature can be used to explain reentry onset during premature excitation of the heart. The model suggests that only by pacing from certain locations and at certain coupling intervals will the conditions conducive to reentry initiation be met, and that based on the mechanism, the reentry morphology must always be in the form of a double loop. Thus, it may be possible to improve the success rate for clinical tachycardia induction and mapping during electrophysiologic study by more accurately predicting at what locations will premature excitation lead to successful induction of reentrant tachycardia. Furthermore, we show that the size and shape of the reentry isthmus is constrained to certain dimensions. All of these findings are potentially useful for improved and rapid targeting of arrhythmogenic regions in patients with reentrant ventricular tachycardia.

Jesús Cortés

Biocruces, Ikerbasque, Spain

Date: Thursday 10th July 2014

Hour: 9:00-10:00

Room: Pabellón de servicios

Chair: Alex Savio

BIOGRAPHY

Prof. Jesus M Cortes is the head of the Computational Neuroimaging Lab and the scientific coordinator of the Quantitative Biomedicine Unit in Biocruces. After his PhD in Physics at the University of Granada in Spain, he performed postdoctoral research in several world-leading Institutions across the world, including the Radboud University Nijmegen The Netherlands (Prof. Bert Kappen), The Salk Institute for Biological Studies USA (Prof. Terry Sejnowski) and the University of Edinburgh UK (Prof. Mark van Rossum). Although trained in physics and computer science, Dr. Cortes moved to Neuroscience to apply quantitative and computational methods to neuronal data. In particular, Dr. Cortes is currently focused on the applications of statistical methods and Information Theory to neuroimaging data. He has more than 38 peer-reviewed publications and has given 41 official scientific talks. Among many other merits, he got "PhD with Distinction" in Science at the University of Granada Spain, a Fulbright Postdoctoral Visitor Fellowship, a Ramon y Cajal Fellowship and became the Spanish Ambassador of the first-class Neural Information Processing Systems Conference (NIPS 2011).More information at http://jesuscortes.info

TITLE

Computational Neuroimaging for health and disease

ABSTRACT

Modern neuroimaging methods can shed light on the basis of neuronal and cognitive specializations, with important implications for neuroscience and medicine. In particular, there is a growing interest in determining what aspects of brain function can be understood from what exact features of brain structure. I will speak on recent results developed in our lab, with applications to clinical data. Further information at http://www.biocruces.com/l1003

Juan Manuel Gorriz

University of Granada, Spain

Date: Friday 11th July 2014

Hour: 11:00-12:00

Room: Pabellón de servicios

Chair: Manuel Graña

BIOGRAPHY

Juan Manuel Górriz was born in Almería, Spain in 1976. He received a BSc. in Physics (2000) and a BSc. in Electronic Engineering (2001) from the University of Granada (UGR), Spain. He then earned a PhD from the University of Cádiz (2003) and a PhD from the University of Granada (2006). Dr.Dr. Górriz is a full Professor with the Department of Signal Theory, Networking and Communications at the UGR. He has coauthored more than 200 technical journals and conference proceedings and served as editor for several journals and books. His present interests lie in the field of statistical signal processing and its application to medical image processing.

TITLE

DiagnoSIS: Diagnosis by means of Statistical and Intelligent Systems

ABSTRACT

Aim of diagnoSIS project is to develop, implement, validate and integrate patient-specific computer-based models of cerebral neurodegeneration, characterizing different stages and types of dementia diseases, to be used for early and differential diagnosis of Alzheimer (AD) and Parkinson (PD) diseases. These models, which describe several stages and types of dementia, are based on existing, intensive, computer-based statistical and intelligent systems taking advantage of large and shared datasets of structural (MRI) and functional (SPECT, PET) imaging studies of normal and pathological populations (i.e. ADNI or PPMI databases). The models

are at a multiscale level (from image voxels to volumes up to the whole brain, from cellular to molecular and tissue up to the whole brain), and integrate physiological and molecular information (i.e. cerebral glucose metabolism) with anatomical information (i.e. atrophy) across different levels (from individual brains to populations of brains). Models of multimodal images for specific validation (i.e. PET/MRI images from new prototype combined PET/MRI scanners), will be implemented based on novel paradigms in statistical learning theory and signal processing. Crucially, by the use of these computer-based models and databases, a subject-specific brain function/anatomy measurement can be processed at a single-subject basis and cerebral abnormality can be detected.
At the classification stage, diagnoSIS proposes statistical classifiers based on support vector machine, artificial neural network, random forest, Gaussian process and sparsity-based models, texture-based and statistical voxel-based models. At the feature extraction stage parametrical and unsupervised models are analyzed for MRI segmentation and many other approaches, such as empirical mode decomposition (EMD), non negative matrix factorization (NMF), association rules (ARs), etc., are studied as well, for multi- modality image processing.

The increased predictive and diagnostic accuracy afforded by such models can lead to greatly accelerate clinical translation and diagnoSIS has the potentials, with the support given by several international initiatives to really represent a turning point in the actual methods to perform diagnosis, not only in dementia.

Ricardo Sanchez Peña

ITBA & CONICET, Argentina

Date: Wednesday 9th July 2014

Hour: 19:00-20:00

Room: Pabellón de servicios

Chair: Carlos Toro

BIOGRAPHY

Ricardo Sánchez Peña received the Electronic engineer degree from the University of Buenos Aires (Argentina) in 1978, the M.S. and Ph.D. degrees from the California Institute of Technology (USA) in 1986 and 1988, respectively. He worked in CITEFA (1977-1979), CNEA (1989-1994) and the argentine Space Agencies, CNIE (1979-1984) and CONAE (1994-2004) with collaborations for NASA, DLR (Germany), Zona-Tech (Phoenix) and CTA/INPE (Brazil). He was Professor at the University of Buenos Aires (1989-2004), ICREA Research Professor at the UPC, Spain (2005-2009), and visiting Researcher/Professor at Universities in USA and EU. He published 3 books and more than 130 journal and conference papers. Since 2009, he is the head of the Ph.D. program at the Buenos Aires Institute of Technology (ITBA) and CONICET Principal Investigator. He is interested in Identification and Control theory and algorithms and has applied them to acoustics, mechanics, aero & astronautical engineering and in the last years to Diabetes type 1.

TITLE

Automatic Control of Diabetes type 1

ABSTRACT

This talk considers the autonomous control of glucose levels in diabetes type 1 patients. The connection of a continuous glucose monitor with an insulin pump by means of a control algorithm is the focus of this work. Different mathematical models and their use in the design of control algorithms as well as in performance simulations will be discussed. An

overview of several control techniques and recent results by the author using FDA-approved simulations will be presented.

Sebastiano Stramaglia

Ikerbasque Visiting Professor, Spain

Date: Thursday 10th July 2014
Hour: 15:00-16:00
Room: Pabellón de servicios
Chair: Darya Chyzhyk

BIOGRAPHY

His background is on Statistical Mechanics, and since 1997 he has been applying concepts and methodologies from Statistical Mechanics and Machine Learning to the modelling and data analysis of neural networks and biological systems.
The present research activity focuses on the inference of functional and effective brain connectivity from brain signals.

TITLE

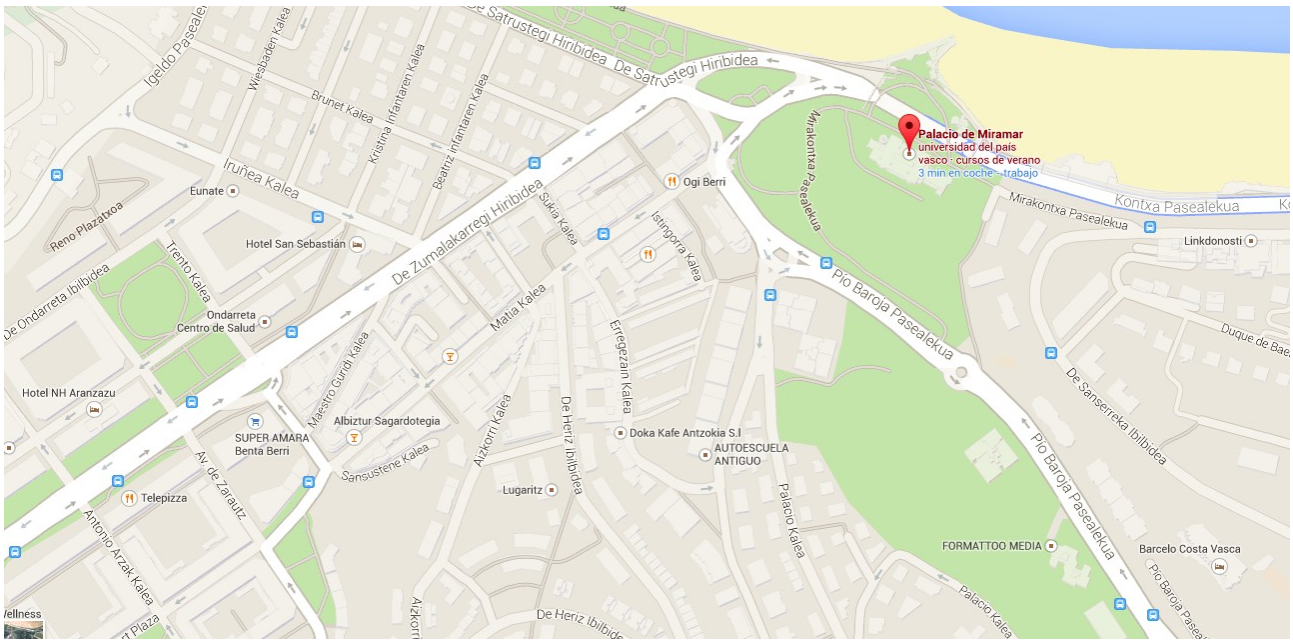
Causality measures for Brain Computation

ABSTRACT

The inference of information flow between dynamical subsystems, from data, is a topic of general interest, in particular in neuroscience. Transfer entropy and Granger causality are popular methods to distinguish effectively driving and responding elements and to detect asymmetry in the interaction of neuronal subsystems. Granger causality is based on prediction: if the prediction error of the first time series is reduced by including measurements from the second one in the linear regression model, then the second time series is said to have a causal influence on the first one. I will describe the recent advances in the field, which cope general problems, like the presence of redundancy in the data, as well as peculiar issues to EEG and fMRI modalities.

LOCATION

The conference will take place in the city of San Sebastián or Donostia, a vibrant city presiding over the beautiful Bay of Biscay in the North of Spain, near the border with France. Donostia is an important city of commerce and tourism in the heartlands of the Basques and is proud of its Basque traditions and language. The city may be more familiar to the outside world through its Spanish name, San Sebastián, site of the famous annual San Sebastián International Film Festival. The agreeable climate and the scenic views have long proved a draw for many visitors, from ordinary families to international film stars. In recognition of this, the city has been selected as European Capital of Culture for 2016 (jointly with Wroclaw, Poland).

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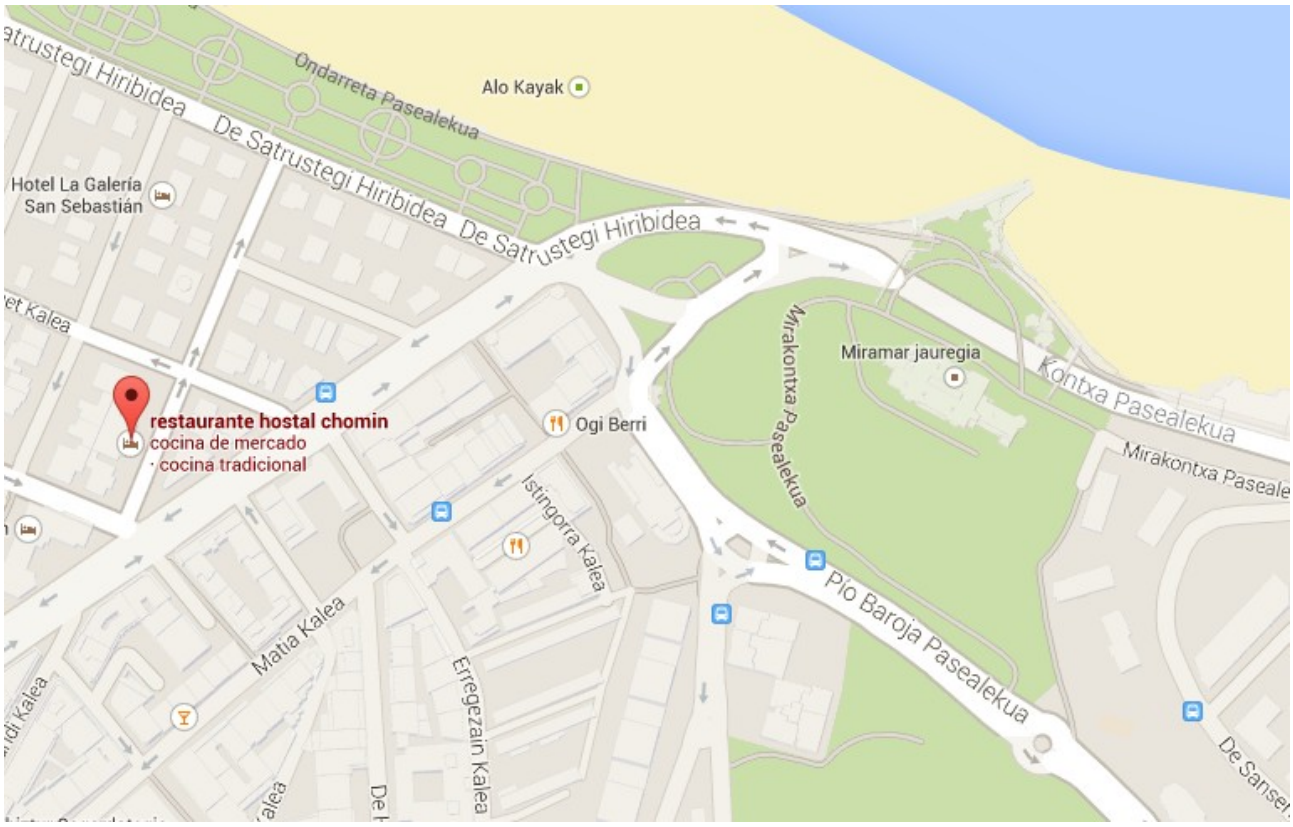
CONFERENCE DINNER

The conference dinner will take place in Chomin restaurant. (http://www.restaurantechomin.info)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De Satrustegi Hiribidea
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San Sebastián
restaurante hostal chomin
cocina de mercado
· cocina tradicional
Ogi Berri
Miramar jauregia
Kontxa Pasealekua
Mirakontxa Pasealekua
Istingorra Kalea
Matia Kalea
Erregezain Kalea
Pío Baroja Pasealekua

PROGRAMME

Programme Schedule

	WED. 9	THU. 10	FRI. 11
ROOM	**Pabellón de servicio**	**Pabellón de servicio**	**Pabellón de servicio**
9:00 - 9:30		**Keynote: Jesús Cortés**	**SESSION INMED S5** IS08 Advances in Data & Knowledge Management for Healthcare
9:30 - 10:00			
10:00 – 10:30		**SESSION INMED S2** General Track	
10:30 – 11:00			
11:00 – 11:30			**Keynote: Juan Manuel Gorriz**
11.30 – 12:00			
12:00 – 12:30		**Keynote: Edward J. Ciaccio**	**SESSION INMED S6** General Track
12:30 – 13:00			
13:00 – 13:30		**Lunch**	
13:30 – 14:00			
14:00 – 14:30			**Farewell lunch**
14:30 – 15:00			
15:00 – 15:30	**Registration** (15:00 – 20:00)	**Keynote: Sebastiano Stramaglia**	
15:30 – 16:00			
16:00 – 16:30		**SESSION INMED S3** General track & IS06 Computer-aided Image Analyis in Ophthalmology	
16:30 – 17:00	**Opening**		
17:00 – 17:30	**SESSION INMED S1** General track & IS02 Medical Decision-Support Systems		
17:30 – 18:00			
18:00 – 18:30		**SESSION INMED S4** Workshop on Smart Medical Systems	
18:30 – 19:00			
19:00 – 19:30	**Keynote: Ricardo Sanchez Peña**		
19:30 – 20:00			
20:00 ----	**Welcome cocktail**	**Conference dinner Restaurante Chomin**	

ROOM: Pabellón de servicio

	Wednesday 9	*Thursday 10*		*Friday 11*	
	INMED S1	**INMED S2**	**INMED S3**	**INMED S4**	**INMED S5**	**INMED S6**
	imed14-016	imed14-054	imed14-055	imed14-003	imed14-053	imed14-028
	imed14-015	imed14-042	imed14-043	imed14-039	imed14-052	imed14-027
	imed14-014	imed14-041	imed14-025	imed14-037	imed14-050	imed14-022
	imed14-013	imed14-040	imed14-010	imed14-034	imed14-049	imed14-017
	imed14-011	imed14-038	imed14-009	imed14-033	imed14-048	imed14-031
	imed14-006	imed14-036	imed14-020	imed14-019	imed14-047	-
	imed14-004	imed14-035	imed14-024	imed14-005	imed14-044	-
	imed14-023	imed14-030	-	imed14-002	-	-
Session chair	Josu Maiora	Rosalia Dacosta	Manuel González Penedo	Carlos Toro	Massimo Esposito	Borja Ayerdi

Session INMED S1: *General track & IS02 Medical Decision-Support Systems*

Date: Wednesday 9 **Hour:** 17:00 – 19:00 **Room:** Pabellón de servicio

Chairs: Josu Maiora

Paper ID	TITLE	AUTHORS
imed14-016	Method for Building a Medical Training Simulator with Bayesian Networks: SimDeCS	PhD Cecilia Flores, PhD Marta Bez, PhD Helder Coelho, MsC João Fonseca, PhD Ana Respicio
imed14-015	Handling Varying Amounts of Missing Data when Classifying Mental-Health Risk Levels	Eng. Sherine Saleh, Dr. Christopher Buckingham
imed14-014	Analysis of Virus Textures in Transmission Electron Microscopy Images	Dr Sheryl Brahnam, Dr. Florentino Luciano Caetano Dos Santos, Dr. Jeri Hyttinen, Dr. Loris Nanni, Dr. Michelangelo Paci
imed14-013	Texture Descriptors Based on Dijkstra's Algorithm for Medical Image Analysis	Dr. Sheryl Brahnam, Dr. Stefano Ghidoni, Dr. Emanuele Menegatti Dr. Loris Nanni
imed14-011	Affine registration of [123I]FP-CIT SPECT brain images	Dr. Diego Salas-Gonzalez, Dr. Juan Górriz, Dr. Ignacio Illán, Dr. Elmar Lang, Dr. Pablo Padilla, Dr. Javier Ramírez
imed14-006	Gated Sensor Fusion: A way to Improve the Precision of Ambulatory Human Body Motion Estimation	Dr. Alberto Olivares, Dr. Dr. Juan Manuel Górriz, Dr. Gonzalo Olivares, Dr. Javier Ramírez
imed14-004	Statistical Significance in the Selection of the Regions of Interest for Parkinson Brain Image Processing	PhD Pablo Padilla, PhD Ignacio Álvarez-Illán, PhD Juan Manuel Górriz, PhD Javier Ramírez, PhD Diego Salas-González
imed14-023	Two Innovative Healthcare Technologies at the Intersection of Serious Games, Alternative Realities, and Play Therapy	Dr Sheryl Brahnam, Dr Anthony Brooks

Session INMED S2: *General Track*

Date: Thursday 10 **Hour:** 10:00 – 12:00 **Room:** Pabellón de servicio

Chairs: Rosalia Dacosta

Paper ID	TITLE	AUTHORS
imed14-054	Analysis of Medical Care Expenditure by Japanese Prefecture using Fuzzy Robust Regression Model	Professor Yoshiyuki Yabuuchi, Assistant Professor Takayuki Kawaura, Professor Watada Watada
imed14-042	A proposal of Texture Features for interactive CTA Segmentation by Active Learning	prof Josu Maiora, prof Manuel Grana, prof Vasilis Kaburlasos, prof Goerge Papakostas
imed14-041	Findings in resting-state fMRI by differences from K-means clustering	PhD Darya Chyzhyk, professor Manuel Graña
imed14-040	Representing human expertise by the OWL web ontology language to support knowledge engineering in decision support systems	Miss Asia Ramzan, Dr Christopher Buckingham, Dr Wang Wang
imed14-038	Automatic classification of segmented MRI data combining Independent Component Analysis and Support Vector Machines	Mrs. Laila Khedher, Mr. Abdelbasset Brahim, Dr. Juan Manuel Gorriz, Dr. Javier Ramirez
imed14-036	Linear intensity normalization of DaTSCAN images using Mean Square Error and a model-based clustering approach	Mr. Abdelbasset Brahim, Dr. Juan Manuel Gorriz, Mrs. Laila Khedher, Dr. Javier Ramirez
imed14-035	Nevus and Melanoma Paraconsistent Classification	Master Sheila Souza, Doctor Jair Abe
imed14-030	Case Mining for Research Findings in a Case-based Reasoning System in the Biology of Aging	Dr. Isabelle Bichindaritz

Session INMED S3: *General track & IS06 Computer-aided Image Analyis in Ophthalmology*

Date: Thursday 10 **Hour:** 16:00 – 18:00 **Room:** Pabellón de servicio

Chairs: Manuel González Penedo

Paper ID	TITLE	AUTHORS
imed14-055	Chance-Constrained Model Predictive Control Applied to Inventory Management in Hospitalary Pharmacy	Dr. Carlos Ocampo-Martinez, Dr. Jose Maria Maestre
imed14-043	Filtering mfVEP signals using Wiener filter	Mr. Miguel Ortiz del Castillo, Phd. Luciano Boquete, Mr. Luis de Santiago, Mr. Alfredo Fernández, Mr. Jose Ramón García-Luque, Mrs. Eva Maria Sánchez-Morla
imed14-025	Automatic assessment of tear film break-up dynamics	Ms. Lucía Ramos, Ms. Noelia Barreira, Ms. María Jesús Giráldez, Mr. Hugo Pena-Verdeal
imed14-010	Computed Aided Diagnosis System for Retinal Analysis: Automatic Assessment of the Vascular Tortuosity	Ms. Luisa Sánchez, Dr. Noelia Barreira, Dr. Gabriel Coll de Tuero, Dr. Manuel Penedo
imed14-009	Automatic Vessel Shade-Robust Segmentation of Retinal Layers in OCT Images	Ms. Ana González-López, Mr. Pablo Charlón, Mr. Marcos Ortega, Mr. Manuel Penedo
imed14-020	Development of braided fiber-based stents	PhD Student Rita Rebelo, Professor Sandra Carvalho, Professor Raul Fangueiro, Professor Mariana Henriques, PhD Student Nívea Vila
imed14-024	Study on fibrous materials for brain phantoms	PhD Student Catarina Guise, Professor Raul Fangueiro, Professor João Miguel Nóbrega, Professor Walter Schneider

Session INMED S4: *Workshop on Smart Medical Systems*

Date: Thursday 10 **Hour:** 18:00 – 20:00 **Room:** Pabellón de servicio

Chairs: Carlos Toro

Paper ID	TITLE	AUTHORS
imed14-003	Multimodal image data fusion for Alzheimer's Disease diagnosis by sparse representation	Dr. Andrés Ortiz, Student Daniel Fajardo, Dr. Juan M. Górriz, M.Sc. Francisco J. Martínez-Murcia, Dr. Javier Ramírez
imed14-039	Smart Stress Management System for Media and Arts Employees	Lina Bartkiene, Ieva Jackute, Ludmil Kovachec, Rasa Paliskiene, Prof. Andrej Safonov, Prof. Arturas Kaklauskas
imed14-037	Hygehos Home: an innovative remote follow-up system for chronic patients	Mr. Eduardo Carrasco, Mr. Agustín Aguirre, Prof. Manuel Graña, Ms. Eider Sánchez, Mr. José María Susperregui, Dr. Carlos Toro
imed14-034	Specification of Extended Reflexive Ontologies in the context of CDSS	MSc Eider Sanchez, Prof. Manuel Manuel, Dr Carlos Toro
imed14-033	Projecting MRI brain images for the detection of Alzheimer's Disease	Mr. Francisco Martínez-Murcia, Prof. Dr. Juan Górriz, Dr Ignacio Illán, Prof. Dr. Javier Ramírez, Dr. Diego Salas-González, Dr. Fermín Segovia
imed14-019	IEEE 802.14.5/ZigBee Based WSNs -- WPANs and Innovative Application in Medical and Healthcare Systems	Dr Zhongwei Zhang
imed14-005	Review and Challenges of Brain Analysis through DTI Measurements	MSc Alba Garin-Muga, Dr Diego Borro
imed14-002	Activity Classification Using Mobile Phone based Motion Sensing and distributed computing	Mr. Arkaitz Artetxe, PhD. Andoni Beristain, PhD. Luis Kabongo

Session INMED S5: *IS08 Advances in Data & Knowledge Management for Healthcare*

Date: Friday 11 **Hour:** 9:00 – 11:00 **Room:** Pabellón de servicio

Chairs: Massimo Esposito

Paper ID	TITLE	AUTHORS
imed14-053	A Wize Mirror for Lifestyle Improvement	Mr. Massimo Martinelli, PhD Sara Colantonio, PhD Daniela Giorgi, Dr Massimo Magrini, PhD Maria Antonietta Pascali, PhD Ovidio Salvetti PhD Ovidio
imed14-052	A cloud based data management architecture to support Electronic Health Record	Dr. Gianluca Zangara, Dr. Francesco Cangemi, Dr. Francesco Collovà, Dr. Pietro Paolo Corso, Dr. Filippo Millonzi, Mr. Antonio Scarlatella
imed14-050	A Study on Textual Features for Medical Records Classification	Ph.D. Anita Alicante, Ph.D. Flora Amato, Mastrer Degree Giovanni Cozzolino, Ph.D. Francesco Gargiulo, Master Degree Nicla Improda, Full Professor Antonino Mazzeo
imed14-049	Likelihood-Fuzzy Analysis of Parotid Gland Shrinkage in Radiotherapy Patients	Dr. Marco Pota, Mrs. Maria Luisa Belli, Mr. Giovanni Mauro Cattaneo, Dr. massimo Esposito, Mr. Giuseppe Sanguineti, Mrs. Elisa Scalco
imed14-048	PEGASO: A personalised and motivational ICT system to empower adolescents towards healthy lifestyles	Mr Stefano Carrino, Mr Leonardo Angelini, Mr Neil Coulson, Ms Giovanna Rizzo, Mr Jose Serrano, Ms Eloisa Vargiu
imed14-047	Unsupervised Information Extraction from Italian Clinical Records	PhD Anita Alicante, PhD Anna Corazza, PhD Francesco Isgrò, Master Degree Stefano Silvestri
imed14-044	Detection of Healthcare-Associated Urinary Tract Infection in Swedish Electronic Health Records	MSc Hideyuki Tanushi, MD, PhD Maria Kvist, MD, PhD Elda Sparrelid

Session INMED S6: *General track*

Date: Friday 11 **Hour:** 12:00 – 14:00 **Room:** Pabellón de servicio

Chairs: Borja Ayerdi

Paper ID	TITLE	AUTHORS
imed14-028	Understanding Data Collection Behaviour of Mental Health Practitioners	Mr Ali Rezaei-Yazdi, Dr Christopher Buckingham
imed14-027	Validation of a Computerized Technique for Automatically Tracking and Measuring the Inferior Vena Cava in Ultrasound Imagery	Dr. Andrew Smith, BEng. Spencer Bellows, Dr. Peter McGuire, BEng. Jordan Smith
imed14-022	The main issues of enhancement of the effectiveness of medical services provided to the children's population in Republic Armenia	Head of department Marine Mardiyan, Assistant Aharon Barseghyan, Assistant Armine Chopikyan, Assistant Lusine Danielyan, Residence Razmik Dunamalyan
imed14-017	A double closed loop to enhance the quality of life of Parkinson's Disease patients: REMPARK system	Dr. Albert Samà, Dr. Joan Cabestany, Dr- Manuel Moreno-Aróstegui, M.Sc. Carlos Pérez-López, Dr. Daniel Rodríguez-Martín, Dr. Alejandro Rodríguez-Molinero
imed14-031	Improving detection of apneic events by learning from examples and treatment of missing data	Dr. Elena Hernández-Pereira, Dr. Diego Álvarez-Estévez, Dr. Vicente Moret-Bonillo