Contents

Chair's Welcome Message

On behalf of the KES2015 organizing committee, I am honoured and delighted to welcome you to Singapore for the 19th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems. This conference is jointly organized by Institute of Systems Science (ISS) of the National University of Singapore (NUS) and KES International.

This yearly KES conference represents one of the largest gathering of researchers, scientists and industry professionals in the field of Knowledge-based and Intelligent Systems in the world. This year is no exception. We have close to 250 delegates from around the world to disseminate research accomplishments and to discuss the latest advances in tools, technologies and applications in Intelligent Systems.

We have five keynote speeches from internationally respected researchers, 11 general tracks and 23 special invited sessions covering a broad spectrum of areas in Knowledge-Based and Intelligent Systems. Each paper was peer reviewed by at least two members of the International Program Committee and International Reviewer Board. Out of a large number of submissions, only 204 of the best papers have been selected for oral presentation and publication in the Procedia Computer Science published by Elsevier.

KES2015 is indebted to the many dedicated people who contributed to the success of this conference. In particular, the Director of ISS and the General Chair whose passionate support was invaluable for bringing this conference to Singapore; the International Programme Committee Chair, the General Track Chairs, the Special Session Chairs, all programme and reviewer committee members who collectively ensured that all papers were thoroughly peer-reviewed to meet the highest standard of academic publication; the Local Organizing Committee for working tirelessly to ensure the best quality experience for the delegates and the social programs; the ISS graduate student volunteers for sacrificing their study time to help with logistics; and last by not least, we thank all authors, presenters and delegates for their valuable contribution. I would like to express my sincere thanks to our Keynote Speakers, Prof. Toyoaki Nishida, Prof. Rossi Setchi, Prof. Ah-Hwee Tan, Prof. Kay-Chen Tan, and Prof. Hong Yan.

My special thanks go to the Singapore Tourism Board for their generous contribution and effort in helping to bid for hosting KES2015 in Singapore. I believe KES has chosen a venue that guarantees a successful conference, and I think you will find Singapore to be an exciting and memorable destination for both business and pleasure.

It has been a great privilege for me to serve as the Honorary Chair of KES2015 and it is my hope that you find the conference enriching, fulfilling and enjoyable. I thank you for your support and your attendance.

Prof Christopher Chia
Institute of Systems Science, National University of Singapore
Honorary Chair, KES2015

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Dr. Fangming Zhu	National University of Singapore, Institute of Systems Science
Prof. Alfred Zimmermann	Reutlingen University, Germany

General Track Sessions

Code	Track Title	Track Chair
G01	Artificial Neural Networks, Fuzzy Methods and Machine Learning	Liya Ding
G02	Nature Inspired Methods and Optimization	Cecilia Zanni-Merk
G03	Knowledge Based and Expert Systems	Anne Hakansson
G04	Agent and Multi-Agent Systems	Gordan Jezic
G05	Knowledge Discovery and Data Mining	Ireneusz Czarnowski
G06	Web Intelligence	Dariusz Krol
G07	Natural Language Processing	Girish Nath Jha
G08	Knowledge Management	Ron Hartung
G09	Intelligent Vision, Image Processing and Signal Processing	Tuan D. Pham
G10	E-Learning, E-Business and E-Commerce	Toyohide Watanabe, Tomoko Kojiri & Yuki Hayashi,
G11	Intelligent Systems Applications and Miscellaneous Topics	Carlos Toro

Invited Sessions

Code	Session	Session Chair
IS02	E-learning and ICT for active learning	Hideyuki Kanematsu & Kazunori Nishino
IS03	Advances from Heuristics to Hyperheuristics: new trends and applications in hard optimization	Moez Hammami & Sadok Bouamama
IS04	Cyber-Physical Systems	Anne Hakansson, Ronald Hartung & Esmiralda Moradian
IS05	Networks for Innovation, Knowledge Creation and Sharing	Shuichiro Yamamoto & Atsuo Hazeyama
IS07	Intelligent Computer Vision Systems	Margarita Favorskaya, Lakhmi C. Jain & Mikhail Sergeev
IS09	Skill Acquisition and Ubiquitous Human Computer Interaction	Hirokazu Taki
IS11	Meta-Heuristics Optimization for Real World Applications in Engineering and Technology	Pandian Vasant
IS12	Data Science for Big Data	Katsutoshi Yada & Takahira Yamaguchi
IS14	Intelligent Transport Systems	Milan Simic
IS16	Quantitative Method of Decision Making in Changing Financial and Social Environment	Mieko Tanaka-Yamawaki
IS17	Intelligent Medical and Healthcare Informatics	Yulia Hicks, Shoji Kobashi & Hiroharu Kawanaka
IS28	Diseases Diagnostic and Prognostic Systems Based on Digital Image Processing and Artificial Intelligence	Nor Ashidi Mat Isa & Khairunnisa Hasikin
IS18	Knowledge-Based Intelligent System and Application	Yuji Iwahori, Yoshinori Adachi, Nobuhiro Inuzuka & Ryosuke Yamanishi
IS19	Knowledge-Based Systems for e-Business	Kazuhiko Tsuda, Nobuo Suzuki & Masakazu Takahashi
IS20	Human factors for communication & intelligent systems	Atsuko Yamazaki & Hiroshi Hasegawa
IS22	Chance Discovery and Market of Data	Akinori Abe, Yukio Ohsawa & Noriyuki Kushiro, Kyushu

Code	Session	Session Chair
IS23	Intelligent Network, Services and Knowledge Management	Motoki Miura, Takaya Yuizono, Jun Munemori & Hiroshi Sakai
IS06	Network and System Security	Dr Esmiralda Moradian
IS24	Knowledge-based Learning and Education Support System: Design and Function	Tomoko Kojiri, Yuki Hayashi & Toyohide Watanabe
IS25	Immunity-Based Systems: Resilient Computing	Yoshiteru Ishida & Chih-Hung Chen
IS26	Business Intelligence and Logistics Management in Ecommerce	Xiangpei Hu
IS27	Intelligent Optimization, Decision Making and Data Mining	Hideki Katagiri
IS30	Data-driven Intelligent Systems	Fangming Zhu

Plenary Talks

Prof. Toyoaki Nishida

Dept. of Intelligence Science and Technology, Graduate School of Informatics, Kyoto University

Conversational Informatics: Toward Cultivating Wisdom from Conversational Interaction

Abstract: People converse with each other for many reasons: to exchange information, to discuss an issue, to resolve a conflict, to increase mutual understanding, to compose a joint story, or just for fun. Conversation will remain as a vital means for people to communicate with a vast variety of autonomous agents in the emerging human-agent symbiotic society, as people are sufficiently proficient and adaptive in expressing and interpreting thoughts and feelings by exploiting a sophisticated structure and dynamism of conversational interaction. Conversational informatics is a field of research that focuses on conversational interaction. On the scientific side, it attempts to unveil how mental processes interact with each other to share thoughts and feelings using social signals. On the engineering side, it aims at designing and implementing cognitive artifacts that can fluently interact with people and possibly with other cognitive artifacts in a conversational fashion. In this talk, I present a data-intensive approach to conversational informatics. It not only brings about quantitative understanding, permitting us to turn a great accumulation of keen observations into a pile of computational models, but also helps to build conversational agents by virtue of recent progress in machine learning and data mining, learning by imitation in particular. The topics include a smart space for allowing people to engage in conversation in a cyber-physical space, computer-vision for helping conversational intelligence produce/consume conversational content, content measurement analysis and modeling for quantitative understanding, learning by demonstration for conversational intelligence to autonomously learn conversation, cognitive design for communicating tacit intentions, and synthetic evidential study for understanding by synthetic performance.

Biography: Toyoaki Nishida is Professor at Department of Intelligence Science and Technology, Graduate School of Informatics, Kyoto University. He received the B.E., the M.E., and the Doctor of Engineering degrees from Kyoto University in 1977, 1979, and 1984, respectively. His research centers on artificial intelligence and human computer interaction. He opened up social intelligence design and conversational informatics as a new field of research on the human-agent symbiosis. Together with

his peers, he has organized a series of international workshops on social intelligence design and published several special issues on that subject in the AI & Society journal. He published a couple of books from Wiley and Springer in 2007 and 2014, respectively. In order to contribute to synergy in academic research, he is serving for numerous academic enterprises, including the AI & Society journal as an associate editor, the New Generation Computing journal as an area editor (Cognitive Computing), and the Science Council of Japan as an associate member. He was the president of JSAI (Japanese Society for Artificial Intelligence) for FY 2010-2011. He has been appointed the research supervisor for the JST-CREST research area on Creation of Human- Harmonized Information Technology for Convivial Society, since January 2014.

Prof. Rossi Setchi

Director, Mechanics, Materials and Advanced Manufacturing Research Theme, Cardiff University, UK

Computational Semantics in Knowledge Engineering

Abstract: Computational Semantics investigates the process of constructing and reasoning with semantics - the study of meaning. In her talk, Professor Setchi will focus on two main areas of research in computational semantics: semantic interpretation and semantic reasoning. She will discuss how Computational Semantics is used in Knowledge Engineering to create, discover, manage and reason with knowledge in various domains including design and innovation, intellectual property, and service robotics. She will show through examples how semantics could be used to improve creativity, situational awareness, intuitive interaction and quality of life. She will illustrate her talk with examples of practical applications from several multidisciplinary projects led by her, investigating real-world problems in the context of human-centred and context-aware computing.

Biography: Professor Rossi Setchi leads the Mechanics, Materials and Advanced Manufacturing Research Theme at Cardiff University. Her main research interests are in knowledge engineering, knowledge-based systems, intelligent manufacturing, robotics, systems engineering, and AI.

Professor Setchi has collaborated with a large number of UK and overseas universities, research organisations and industrial companies from more than 20 countries in Europe, Asia and Australia. She has provided research leadership in over 20 collaborative projects funded by UK and overseas funding bodies, and generated, together with colleagues, research funding of over £15 million.

Professor Setchi has contributed over 150 refereed research papers to international journals and conferences in 18 countries. She has chaired two major conferences: the 14th International conference on Knowledge-based and Intelligent Information and Engineering Systems (KES2010) and the Inaugural International Conference on Sustainable Design and Manufacturing (SDM2014).

Professor Setchi has been a recipient of the 1999 Literati Club Award for Excellence, 2004 Donald Julius Groen Prize of the Institution of Mechanical Engineers, and awarded the KES Conference Best Paper Award in 2012 and 2013.

Professor Setchi is a Chartered Engineer, Chartered IT Professional, and European Engineer. She is Fellow of the Institution of Mechanical Engineers, Fellow of the Institution of Engineering and Technology, Fellow of the British Computer Society, and Senior Member of IEEE. She acts as Associate Editor of the International Journal of

Systems Science (IJSS), and the International Journal of Knowledge and Systems Science (IJKSS).

Prof Ah-Hwee Tan
Nanyang Technological University, Singapore

Knowledge Integration and Reinforcement Learning in Self-Organizing Neural Networks

Abstract: Knowledge integration and learning are two key issues in designing knowledge-based intelligent systems. This talk will present a family of self-organizing neural networks, collectively known as fusion Adaptive Resonance Theory (fusion ART), for building knowledge-based intelligent systems with real-time learning capabilities. By extending the original Adaptive Resonance Theory (ART) models consisting of a single pattern field into a multi-channel architecture, fusion ART unifies a number of important neural network designs developed over the past decades. Based on a universal set of neural encoding and adaptation principles, fusion AT supports a myriad of learning paradigms, notably unsupervised learning, supervised learning, and reinforcement learning. In addition, domain knowledge in the form of symbolic rules can be inserted into fusion ART and subsequently refined as part of the network's dynamics, which maximizes exploitation of the existing knowledge while retaining the plasticity of exploring new solutions. Several case studies will be presented, illustrating how such self-adaptive knowledge-based systems may be used as autonomous players in first-person shooting games, Computer Generated Forces (CGF) in air combat simulation, and human-like avatars in virtual environment.
Ah-Hwee Tan

Biography: Dr Ah-Hwee Tan received a Ph.D. in Cognitive and Neural Systems from Boston University, a Master of Science and a Bachelor of Science (First Class Honors) in Computer and Information Science from the National University of Singapore. He is currently an Associate Professor at the School of Computer Engineering (SCE), Nanyang Technological University and was the founding Director of Emerging Research Laboratory, a center for incubating new interdisciplinary research initiatives. Prior to joining NTU, he was a Research Manager at the A*STAR Institute for Infocomm Research (I2R), heading the Text Mining and Intelligent Agents research programmes. His current research interests include cognitive and neural systems, brain-inspired intelligent agents, machine learning, and text mining. Dr. Tan has published over 200 technical papers in major international journals and conferences of his fields, including 6 edited books. He holds two US patents, five Singapore patents, and has spearheaded several A*STAR projects in commercializing a suite of knowledge management and text mining software. He serves as Associate Editor/Editorial Board Member of several journals, including IEEE Access, IEEE

Transactions on Neural Networks and Learning, IEEE Transactions on SMC Systems, and Applied Soft Computing. He is a Senior Member of IEEE and Vice Chair of IEEE ETTC Task Force on Towards Human-Like Intelligence.

Prof Kay Chen Tan
Department of Electrical and Computer Engineering, National University of Singapore (NUS), Singapore

Recent Advances in Evolutionary Multiobjective Optimization and Applications

Abstract: Multi-objective optimization is widely found in many fields, such as logistics, economics, engineering, or whenever optimal decisions need to be made in the presence of trade-offs. The problem is challenging because it involves the simultaneous optimization of several conflicting objectives in the Pareto optimal sense and requires researchers to address many issues that are unique to MO problems. This talk will first provide an overview of evolutionary computation for multi-objective optimization (EMO). It will then discuss challenges faced in EMO research and present various EMO algorithms for good optimization performance. The talk will also discuss the application of evolutionary computing techniques for solving engineering problems, such as logistics, design optimization and prognostic applications.

Biography: Dr. Kay Chen Tan received his B. Eng degree with First Class Honors in Electronics and Electrical Engineering, and his Ph.D. degree from the University of Glasgow, Scotland, in 1994 and 1997, respectively. He is currently an Associate Professor in the Department of Electrical and Computer Engineering, National University of Singapore (NUS), Singapore. Dr. Tan actively pursues research in the area of computational intelligence, with applications to multi-objective optimization, scheduling, automation, data mining, and games. He has published over 100 journal papers, over 100 papers in conference proceedings, and co-authored 5 books. Dr. Tan has been an Invited Keynote/Plenary speaker for over 40 international conferences. He served in the international program committee for over 100 conferences and involved in the organizing committee for over 50 international conferences. Dr. Tan is the General Co-Chair for IEEE World Congress on Computational Intelligence 2016 in Vancouver, Canada. Dr. Tan is currently an elected member of AdCom (2014-2016) and is an IEEE Distinguished Lecturer of IEEE Computational Intelligence Society (2011-2013; 2015-2017).

Dr. Tan is the Editor-in-Chief of IEEE Transactions on Evolutionary Computation. He was the Editor-in-Chief of IEEE Computational Intelligence Magazine (2010-2013). He currently serves as an Associate Editor / Editorial Board member of over 20 international journals, such as IEEE Transactions on Cybernetics, IEEE Transactions on Computational Intelligence and AI in Games, Evolutionary Computation (MIT Press), European Journal of Operational Research, Neural Computing and Applications, Journal of Scheduling, International Journal of Systems Science, etc.

Dr. Tan is a Fellow of IEEE. He is the awardee of the 2012 IEEE Computational Intelligence Society (CIS) Outstanding Early Career Award for his contributions to evolutionary computation in multi-objective optimization. He also received the Recognition Award (2008) from the International Network for Engineering Education & Research (iNEER) for his outstanding contributions to engineering education and research. He was felicitated by the International Neural Network Society (INNS) India Regional Chapter (2014) for his outstanding contributions in the field of computational intelligence.

Prof. Hong Yan
Department of Electronic Engineering, City University of Hong Kong

Detection of Coherent Patterns in Multidimensional Data

Abstract: An important problem in "big data" analysis is to detect and classify meaningful patterns. We can perform data classification in either feature or object direction based on traditional clustering algorithms. However, if a coherent pattern embedded in the data involves a subset of features and a subset of objects, then biclustering analysis is needed, which is often more complicated than clustering. The problem is even more challenging if the data dimensionality is large. For example, in gene expression data, we may be interested in extracting a subset of genes that co-express under a subset of conditions at a subset of time points. In consumer data analysis, we may want to find a subset of consumers who like a subset of products in a subset of locations. In these two cases, we need to analyze three dimensional data arrays, or perform triclustering. Recently, we have discovered that a class of coherent patterns in multidimensional data can be represented as hyperplanes in singular vector spaces. By decomposing a data array into singular vector matrices, we can then deal with pattern coherence in individual directions. We have applied our coherent pattern detection algorithms to genomic data analysis, disease diagnosis and drug therapeutic effect assessment. Our method can also be useful for many other real world data mining and pattern recognition applications.

Biography: Hong Yan received his PhD degree from Yale University. He was Professor of Imaging Science at the University of Sydney and is currently Professor of Computer Engineering at City University of Hong Kong. His research interests include image processing, pattern recognition and bioinformatics, and he has over 300 journal and conference publications in these areas. Professor Yan was elected an IAPR fellow for contributions to document image analysis and an IEEE fellow for contributions to image recognition techniques and applications. He is currently an IEEE Distinguished Lecturer. Professor Yan's group is working on biomedical imaging and genomic data analysis. They have developed advanced signal processing and pattern recognition based techniques for DNA microarray data restoration, biclustering analysis and classification, and the prediction of protein-ligand, protein-DNA and protein-protein interactions. These methods have many useful applications to disease diagnosis, drug design and drug therapeutic effect assessment.

Conference Timetable

Monday 7 September

DAY-1	Main	Room-1	Room-2	Room-3	Room-4	Room-5	Room-6	Room-7
08:00-09:00	Registration							
09:00-09:15	Opening Ceremony							
09:15-10:15	Plenary-1 –Prof. Kay Chen Tan (Chair: Prof. Rossi Setchi)							
10:15-10:45	AM Coffee Break							
10:45-12:45	G01+G02 Prof Cecilia Zanni-Merk	G04+G06 Prof Gordan Jezic	IS24 Dr Tomoko Kojiri	IS02 Prof Hideyuki Kanematsu	IS05 Prof Shuichiro Yamamoto	IS03 Dr Ines Alaya	IS04 Prof Anne Hakansson	IS27 Dr Hideki Katagiri
12:45-13:45	Lunch Break							
13:45-14:45	Plenary-2 – Prof. Rossi Setchi (Chair: Prof Colette Faucher)							
14:45-15:45	PM Coffee Break							
15:45-18:45	Social Outing							

Conference Timetable

Tuesday 8 September

DAY-2	Main	Room-1	Room-2	Room-3	Room-4	Room-5	Room-6	Room-7
08:00-09:00	Registration							
09:00-10:00	Plenary-3-Prof. Hong Yan (Chair: Dr Carlos Toro)							
10:00-10:30	AM Coffee Break							
10:30-12:30	G05(1) Prof Carson Leung Prof Yuki Hayashi	G09(1) Prof Petra Perner	G03 Prof Anne Hakansson	IS12(1) Prof Katsutoshi Yada	IS20(1) Prof Atsuko Yamazaki	IS23(1) Prof Motoki Miura Dr Esmiralda Moradian	IS25(1) Prof Yoshiteru Ishida	IS18(1) Prof Yuji Iwahori
12:30-13:30	Lunch Break							
13:30-14:30	Plenary-4 -Prof. Ah-Hwee Tan (Chair: Prof Hong Yan)							
14:30-15:00	PM Coffee Break							
15:00-17:00	G05(2) & G10 Prof Carson Leung Prof Yuki Hayashi	G09(2) Prof Petra Perner	IS07 Prof Margarita Favorskaya	IS12(2) & IS11 Prof Katsutoshi Yada	IS20(2) Prof Atsuko Yamazaki	IS23(2) &IS06 Prof Motoki Miura Dr Esmiralda Moradian	IS25(2) Prof Yoshiteru Ishida	IS18(2) Prof Yuji Iwahori
19:00 - 22:00	Conference Dinner							

23

Conference Timetable

Wednesday 9 September

DAY-3	Main	Room-1	Room-2	Room-3	Room-4	Room-5	Room-6	Room-7
09:00-09:30	Registration							
09:30-10:30	Plenary-5 - Prof. Toyoaki Nishida (Chair: Prof Lakhmi Jain)							
10:30-11:00	AM Coffee Break							
11:00-13:00	G08(1) Prof Ron Hartung	IS09(1) Prof Hirokazu Taki	IS17(1) Dr Yulia Hicks	IS26(1) Prof Xiangpei Hu	IS19 Prof Kazuhiko Tsuda	G07 Dr Girish Nath Jha Dr Gan Keng Hoon	G11(1) Dr Carlos Toro	IS16 Prof Mieko Tanaka-Yamawaki
13:00-14:00	Lunch Break							
14:00-16:00	G08(2) Prof Ron Hartung	IS09(2) Prof Hirokazu Taki	IS17(2) & IS28 Dr Yulia Hicks	IS26(2) Prof Xiangpei Hu	IS22 Prof Akinori Abe	IS14 Dr Milan Simic	G11(2) Dr Carlos Toro	IS30 Dr Fangming Zhu
16:00-16:30	PM Coffee Break							
16:30-17:00	Closing Ceremony							

Presentation Schedule

Monday 7 September, 10:45 – 12:45
Main Room

G01: Artificial Neural Networks, Fuzzy Methods and Machine Learning &
G02: Nature Inspired Methods and Optimization

Chair: Prof Cecilia Zanni-Merk

Selecting Start-Up Businesses in a Public Venture Capital Financing using Fuzzy PROMETHEE
Eric Afful-dadzie, Zuzana Komínková Oplatková and Stepehen Nabareseh

Control Strategies for Hybrid Vehicles in Mountainous Areas
Simon Burgalat, Sofiane Brouk, Maximilien Buey, Serena Ly and Maxime Pedron

Dynamic Objective Sampling in Many-Objective Optimization
Mihaela Breaban and Adrian Iftene

A Multi Objective Evolutionary Algorithm for Solving a Real Health Care Fleet Optimization Problem
Carlos Catania, Pierre Collet, François De Bertrand De Beuvron and Cecilia Zanni-merk

A New Heuristic for Solving the Parking Assignment Problem
Sofiene Abidi, Enrique Alba, Saoussen Krichen and Juan Miguel Molina

Indicator Based Ant Colony Optimization for Multi-Objective Knapsack Problem
Imen Ben Mansour and Ines Alaya

Monday 7 September, 10:45 – 12:45
Room 1

G04: Agent and Multi-Agent Systems & G06: Web Intelligence

Chair: Prof Gordan Jezic

Agent's security during communication in mobile agents system
Chadha Zrari, Khaled Ghedira & Hela Hachicha

Hybrid metaheuristics within a holonic multiagent model for the flexible job shop problem
Houssem Eddine Nouri
Olfa Belkahla Driss & Khaled Ghédira

Agent-based Movement Analysis and Location Prediction in Cellular Networks
Marin Vukovic & Dragan Jevtic

Implicit Social Networking: Discovery of Hidden Relationships, Roles and Communities
Vedran Podobnik   & Ignac Lovrek

Extended Query Pattern Graph and Heuristics - based SPARQL Query Planning
Fuqi Song & Olivier Corby

Monday 7 September, 10:45 – 12:45
Room 2

IS24: Knowledge-based Learning and Education Support System: Design and Function

Chair: Dr Tomoko Kojiri

Time series analysis of the in class page view history of digital teaching materials using cross table
Konomu Dobashi

Supporting teachers for descriptive quiz in large class -Find imperfect understandings by using typing information-
Haruhiko Takase, Kenji Hayakawa, Hiroharu Kawanaka & Shinji Tsuruoka

Proposal of a Supporting System for Planning, Executing and Reflecting Tasks in Research Activities
Mr Kenya Miyamoto
Hisayoshi Kunimune & Masaaki Niimura

A Conversational Agent to Encourage Willingness To Communicate in the Context of English as a Foreign Language
Mr Emmanuel Ayedoun
Yuki Hayashi & Kazuhisa Seta

"If Thinking" Support System for Training Historical Thinking
Mr. Yuta Miki
Tomoko Kojiri & Kazuhisa Seta

Verbalization Support for Motor Skill Using Form Drawing Tool Based on Skelton Model
Ryota Hashimoto & Tomoko Kojiri

Monday 7 September, 10:45 – 12:45
Room 3

IS02: E-learning and ICT for active learning

Chair: Prof Hideyuki Kanematsu

Improve the adaptation navigation in educational cross-systems
Ghorbel Leila Ghorbel, Amous Ikram Amous & Zayani Corinne Amel Zayani

The Experiment of Sweden Game and the Evaluations of Gaming Result
Masashi Kawaguchi, Norio Baba & Hideyuki Kanematsu

Promotion of Active Learning at National Institute of Technology, Gifu College
Nobuyuki Ogawa & Akira Shimizu

Evaluation For Students? Learning Manner Using Eye Blinking System in Metaverse
Dana Barry, Asanka Dharmawansa, Yoshimi Fukumura, Hideyuki Kanematsu, Nobuyuki Ogawa & Tatsuya Shirai

The Association between the Score and the Vocabulary in the Waka Essay by High School Student with Waka Learning System.
Kimitoshi Toyose, Nobutake Asaba & Nishino Kazunori

Development of a method for visualization of skills at experiments and practical training
Yoshihiro Takeichi, Shota Matsuhashi, Katsuhide Misono, Jun Sato, Shin-nosuke Suzuki & Kuniaki Yajima

Monday 7 September, 10:45 – 12:45
Room 4

IS05: Networks for Innovation, Knowledge Creation and Sharing

Chair: Prof Shuichiro Yamamoto

The effectiveness of D-Case application knowledge on a safety process
Nobuhide Kobayashi & Shuichiro Yamamoto

A Systematic Knowledge Education Approach for Safety-Critical System
Development
Shuichiro Yamamoto

A Study on Growth Model of OSS Projects to estimate the stage of lifecycle
Yoshitaka Kuwata & Hiroshi Miura

Investigating Network-based Proximity in American Biotechnology
Der-shiuan Lee

A Case-based Management System for Secure Software Development Using
Software Security Knowledge
Atsuo Hazeyama, Haruhiko Kaiya, Takao Okubo, Masahito Saito, Hironori
Washizaki & Nobukazu Yoshioka

Monday 7 September, 10:45 – 12:45
Room 5

IS03: Advances from Heuristics to Hyperheuristics: new trends and applications in hard optimization

Chair: Dr Ines Alaya (organized by Dr. Moez Hammami)

A hybrid ILS-VND based hyper-heuristic for permutation flowshop scheduling problem
Yahyaoui Hiba Yahyaoui & Krichen Saoussen Krichen

Solving bin packing problem with a hybrid genetic algorithm for VM placement in cloud
Mohamed Amine Kaaouache & Sadok Bouamama

GPU-PSO : Parallel Particle Swarm Optimization approaches on Graphical Processing Unit for Constraint Reasoning: Case of Max-CSPs
Dali Narjess & Bouamama Sadok

Meeting Scheduling based on Swarm Intelligence
Hajer Salem & Ahlem Ben Hassine

Guided Genetic Algorithm: A New Template Concept
Hajer Ben Othman & Moncef Tagina

A Hybrid Lagrangian Search Ant Colony Optimization algorithm for the Multidimensional Knapsack Problem
Wafa Nakbi, Ines Alaya & Wiem Zouari

Monday 7 September, 10:45 – 12:45
Room 6

IS04: Cyber-Physical Systems

Chair: Prof Anne Hakansson

Virtual Engineering Object / Virtual Engineering Process: A specialized form of Cyber Physical System for Industrie 4.0
Syed Shafiq, Cesar Sanin, Edward Szczerbicki & Carlos Toro

A prescription for Cyber Physical Systems
Ronald Hartung, Anne Hakansson & Esmiralda Moradian

Reasoning in Smart Cyber-Physical Systems
Anne Håkansson, Ronald Hartung & Esmiralda Moradian

A Communication Protocol for different communication technologies in Cyber-Physical Systems
Mathias Persson & Anne Håkansson

Monday 7 September, 10:45 – 12:45
Room 7

IS27: Intelligent Optimization, Decision Making and Data Mining

Chair: Dr Hideki Katagiri

Recent Advancement in Machine Learning based Internet Traffic Classification
Neeraj Namdev, Shikha Agrawal & Sanjay Silakari

Mixed integer programming approach on examination proctor assignment problem
Takeshi Koide

Methods for Evaluating Pictures and Extracting Music by 2D DFA and 2D FFT
Hidefumi Kawakatsu

Fuzzy random weighted Weber problems in facility location
Takeshi Uno, Hideki Katagiri & Kosuke Kato

A constructing algorithm for appropriate piecewise linear membership function based on statistics and information theory
Takashi Hasuike, Hideki Katagiri & Hiroe Tsubaki

Path optimization for electrical PCB inspections with alignment operations using multiple cameras
Hideki Katagiri, Qingqiang Guo, Hiroshi Hamori, Kosuke Kato, Tomoyuki Muranaka & Bin Wang

Automatic Feature Point Selection through Hybrid Metaheauristics based on Tabu Search and Memetic Algorithm for Augmented Reality
Takeshi Matsui, Yuichi Katagiri, Hideki Katagiri & Kosuke Kato

Tuesday 8 September, 10:30 – 12:30
Main Room

G05(1): Knowledge Discovery and Data Mining

Chairs: Prof Carson Leung & Prof Yuki Hayashi

An Iterative Projective Clustering Method
Zakharia Frenkel, Renata Avros, Dvora Toledano-kitai & Zeev Volkovich

User intent estimation from access logs with topic model
Keisuke Uetsuji, Hidekazu Yanagimoto & Michifumi Yoshioka

Transfer AdaBoost SVM for Link Prediction in Newly Signed Social Networks
using Explicit and PNR Features
Anh Thu Nguyen Thi, Thanh Ngo Duc, Tu Anh Nguyen Hoang & Phuc Nguyen
Quang

Visualization of Key factor Relation in Clinical Pathway
Takanori Yamashita, Brendan Flanagan, Satoshi Hamai, Yukihide Iwamoto,
Yasuharu Nakashima & Yoshifumi Wakata

An Approach to Detection of Tampering in Water Meters
Iñigo Monedero, Félix Biscarri, Juan I. Guerrero, Carlos León & Moisés Roldán

Influencer events in episode rules: a way to impact the occurrence of events
Lina Fahed, Anne Boyer & Armelle Brun

Tuesday 8 September, 10:30 – 12:30
Room 1

G09(1): Intelligent Vision, Image Processing and Signal Processing

Chair: Prof Petra Perner

Tracking Living Cells in Microscopic Images and Description of the Kinetics of the Cells
Petra Perner

Depth Sensor Based Automatic Hand Region Extraction by Using Time-Series Curve and Its Application to Japanese Finger-spelled Sign Language Recognition
Katsufumi Inoue, Takami Shiraishi, Hidekazu Yanagimoto & Michifumi Yoshioka

Global iterative closet point using nested annealing for initialization
Linh Tao & Hiroshi Hasegawa

Cognitive Aspects of Object Recognition ? Recognition of Objects by Texture
Petra Perner

Beat Detection of Blood Vessel from SLO Eye Fundus Moving Image
Kouki Yamada, Uchino Eiji, Suetake Noriaki & Kawata Reiji

Human Action Recognition based on Spectral Domain Features
Gerald Schaefer, Atiqur Rahman Ahad, Hafiz Imtiaz, Upal Mahbub & Shao Ying Zhu

Tuesday 8 September, 10:30 – 12:30
Room 2

G03: Knowledge Based and Expert Systems

Chair: Prof Anne Hakansson

Single-succedent system approach to Boolean BI
Norihiro Kamide

Judging Emotion from EEGs Based on an Association Mechanism
Seiji Tsuchiya, Misako Imono, Mayo Morimoto & Hirokazu Watabe

KAMET II Conceptual Modeling Language, a visual and consistent language
proved using Concept Algebra
Osvaldo Cairó Battistutti, Karen Poblete

A Domain Knowledge Based Method on Active and Focused Information
Service for Decision Support within Big Data Environment
Xin Jin, Wu Shanshan, Zong Shiqiang, Ge Weiyi, Yin Wenke & Li Youjiang

Pattern-based transformation of diagrammatic conceptual models for
semantic enrichment in the Web of Data
Robert Andrei Buchmann, Dimitris Karagiannis

Towards ontology matching based system through terminological, structural
and semantic level
Aroua Essayeh & Mourad Abed

Tuesday 8 September, 10:30 – 12:30
Room 3

IS12(1): Data Science for Big Data

Chair: Prof Katsutoshi Yada

Recommendation system for grocery store considering data sparsity
Natsuki Sano, Natsumi Machino, Tomomichi Suzuki & Katsutoshi Yada

Examining the Relationships among National Culture, Individual-Level Cultural
Variable and Consumer Attitudes
Kazuhiro Kishiya, Emeritus Gordon Miracle

Integrating Heterogeneous Data Sources for Planning Road Reconstruction
Tatsuya Kimoto, Takeshi Morita & Takahira Yamaguchi

Efficient method to determine microarea with high potential demand for
broadband services
Motoi Iwashita, Akiya Inoue, Takeshi Kurosawa & Ken Nishimatsu

Proposal of Multi-type Edge Bundling in Force-Directed Layout and it
Evaluation
Ryosuke Saga & Yamashita Takafumi

Visualization System for Shopping Path
Yuta Kaneko, Shinya Miyazaki & Katsutoshi Yada

Tuesday 8 September, 10:30 – 12:30
Room 4

IS20(1): Human factors for communication & intelligent systems

Chair: Prof Atsuko Yamazaki

Effective Method for Rear-end Collision Warning System
Toshio Ito & Kenta Osawa

A proposal of topic map based chatterbot for non-English natural language input
Masaomi Kimura

A Mobile Robot for Fall Detection for Elderly-Care
Takuma Sumiya, Yutaka Matsubara, Miyuki Nakano & Midori Sugaya

Shape and Layout Understanding Method Using Brain Machine Interface for Idea Creation Support System
Hiroshi Hasegawa
Yusuke Ito & Syogo Shibasaki

Tuesday 8 September, 10:30 – 12:30
Room 5

IS23(1): Intelligent Network, Services and Knowledge Management

Chairs: Prof Motoki Miura & Dr Esmiralda Moradian

On Parallelization of the NIS-Apriori Algorithm for Data Mining
Hiroshi Sakai & Mao Wu

Greenhouse environmental control system based on SW-SVR
Yukimasa Kaneda, Hirofumi Ibayashi, Hiroshi Mineno & Naoki Oishi

Tag-based Chat Support System to Remind Users of Contents of Past
Conversations
Rina Tanaka, Junko Itou & Jun Munemori

Communication Support System for Enabling Group Management of
Community Units
Kento Otsuka, Junko Itou & Jun Munemori

Proposal and comparison of an Idea Generation Support System Presenting
Words for the Use of Scarce Knowledge People
Junko Itou, Takayuki Higashi & Jun Munemori

Scenario-based Experiments to Design a Presentation Support System for
Non-native Speakers
Xinbo Zhao, Jun Munemori & Takaya Yuizono

Tuesday 8 September, 10:30 – 12:30
Room 6

IS25(1): Immunity-Based Systems: Resilient Computing

Chair: Prof Yoshiteru Ishida

A study of immunity-based urban system: A morphological approach
Chih-hung Chen
Lin-fang Hsu

SecondDEP: Resilient Computing that Prevents Shellcode Execution in Cyber-Attacks
Takeshi Okamoto

Mutual support in energy sector: toward energy resilience
Nur Budi Mulyono

Asymmetric Characterization of Diversity in Symmetric Stable Marriage Problems: A View for Agent Evacuation
Yoshiteru Ishida

Toward resilient sensor networks with spatiotemporal interpolation of missing data: an example of space weather forecasting
Masahiro Tokumitsu, Keisuke Hasegawa & Yoshiteru Ishida

Simulating Resilient Server using XEN Virtualization
Idris Winarno & Yoshiteru Ishida

Tuesday 8 September, 10:30 – 12:30
Room 7

IS18(1): Knowledge-Based Intelligent System and Application

Chair: Prof Yuji Iwahori

Automatic Detection of Polyp Using Hessian Filter and HOG Features
Yuji Iwahori, Yoshinori Adachi, M. Bhuyan, Akira Hattori, Kunio Kasugai &
Robert Woodham

Object Tracking with Improved Detector of Objects Similar to Target
Shinji Fukui, M Bhuyan, Yuji Iwahori, Ryuji Nishiyama & Robert Woodham

Estimation of Phyletic Trees from Cladograms and Birth Orders
Atsuko Mutoh, Ryosuke Enosawa, Nobuhiro Inuzuka & Shogo Ota

Clustering Mutual Funds Based on Investment Similarity
Takumasa Sakakibara, Nobuhiro Inuzuka, Tohgoroh Matsui & Atsuko Mutoh

Tuesday 8 September, 15:00 – 17:00
Main Room

G05(2): Knowledge Discovery and Data Mining & G10: E-Learning, E-Business and E-Commerce

Chairs: Prof Carson Leung & Prof Yuki Hayashi

Extraction of Interlingual Documents Clusters Based on Closed Concepts Mining
Chebel Mohamed, Latiri Chiraz & Gaussier Eric

Edge-based mining of frequent subgraphs from graph streams
Carson Leung, Alfredo Cuzzocrea, Zhao Han, Fan Jiang & Hao Zhang

Approximation to expected support of frequent itemsets in mining probabilistic sets of uncertain data
Carson Leung, Alfredo Cuzzocrea, Fan Jiang & Richard Kyle MacKinnon

From a Ranking System to a Confidence Aware Semi-Automatic Classifier
Emmanuel Malherbe, Marie-aude Aufaure & Yves Vanrompay

Personalised Learning Materials Based on Dyslexia types: Ontological Approach
Aisha Alsobhi, Nawaz Khan & Harjinder Rahanu

Development of a fuzzy-based multi-agent system for e-commerce settings
Bala Balachandran & Masoud Mohammadian

Tuesday 8 September, 15:00 – 17:00
Room 1

G09(2): Intelligent Vision, Image Processing and Signal Processing

Chair: Prof Petra Perner

Optimization of Stego Image retaining secret information using Genetic
Algorithm with 8-connected PSNR
Rinita Roy & Sumit Laha

Graphical methods for multi-Dialect Arabic isolated words recognition
Elyes Zarrouk, Yassine Benayed & Faiez Gargouri

Application of Subspace Method and Sparse Coding to Tissue Characterization
of Coronary Plaque for High-Speed Classification
Shota Furukawa, Noriaki Suetake, Azetsu Tadahiro & Eiji Uchino

Tuesday 8 September, 15:00 – 17:00
Room 2

IS07: Intelligent Computer Vision Systems

Chair: Prof Margarita Favorskaya

Similarities of Frequent Following Patterns and Social Entities
Kyoji Kawagoe & Carson Leung

Verification of smoke detection in video sequences based on spatio-temporal
local binary patterns
Margarita Favorskaya, Aleksei Popov & Anna Pyataeva

Image categorization using color G-SURF invariant to light intensity
Margarita Favorskaya & Alexander Proskurin

A variable selection method considering cluster loading for labeled high
dimension low sample size data
Jiaxin Chen & Mika Sato-ilic

Tuesday 8 September, 15:00 – 17:00
Room 3

IS12(2): Data Science for Big Data & IS11: Meta-Heuristics Optimization for Real World Applications in Engineering and Technology

Chair: Prof Katsutoshi Yada

Verification of effect on next purchase when many vice category products are brought
Ken Ishibashi, Kei Miyazaki & Katsutoshi Yada

Acceleration Based Particle Swarm Optimization for Graph Coloring Problem
Jitendra Agrawal & Shikha Agrawal

PID Tuning of Servo Motor using Bat Algorithm
Kelvinder Singh, Irraivan Elamvazuthi, Ramani Kannan & Pandian Vasant

Tuesday 8 September, 15:00 – 17:00
Room 4

IS20(2): Human factors for communication & intelligent systems

Chair: Prof Atsuko YamazakiI

An analysis of emotions in reversed Japanese sentences and Malay sentences with NIRS
Muhammad Nur Adilin Mohd Anuardi, Nur Amanina Rasid & Atsuko K. Yamazaki

An Improved Computer Interface Realized by a Recurrent Neural Network and a Natural User Interface
Jiachen Yang & Ryota Horie

A preliminary examination of the effect of massage and aroma oil massage in foot care nursing
Kaoru Eto, Yasuo Kabasawa, Minoru Mukuda, Atsuko Yamazaki, Keita Yonekura & Hiroko Yoshida

Tuesday 8 September, 15:00 – 17:00
Room 5

IS23(2): Intelligent Network, Services and Knowledge Management & IS06:
Network and System Security

Chairs: Prof Motoki Miura & Dr Esmiralda Moradian

Detecting Erase Strokes from Online Handwritten Notes using Support Vector
Classification
Motoki Miura & Yusaku Kobayashi

A Web-based Application for Supporting Writing Novels
Shouhei Nishihara & Motoki Miura

Survey on Anomaly Detection using Data Mining Techniques
Shikha Agrawal & Jitendra Agrawal

Security in Multi-Agent Systems
Yaqin Chen Hedin & Esmiralda Moradian

A Novel Robust Algorithm for Information Security Risk Evaluation
Zne-Jung Lee

Tuesday 8 September, 15:00 – 17:00
Room 6

IS25(2): Immunity-Based Systems: Resilient Computing

Chair: Prof Yoshiteru Ishida

Fermi Estimate on the Web: Placing Sensor Networks on the Web with Noise
Yoshiteru Ishida

Toward application of immunity-based model to gait recognition using smart
phone sensors: a study of various walking states
Yuji Watanabe

A Note on a Continuous Self-Identification as Self-Awareness: An Example of
Robot Navigation
Yoshiteru Ishida

Tuesday 8 September, 15:00 – 17:00
Room 7

IS18(2): Knowledge-Based Intelligent System and Application

Chair: Prof Yuji Iwahori

Development of Web Learning Support System using "My Dictionary" in English Study
Hiroyasu Usami, Yoshinori Adachi, Hideaki Eguchi & Masahiro Ozaki

Analog Neural Circuit and Hardware Design of Deep Learning Model
Masashi Kawaguchi, Naohiro Ishii & Masayoshi Umeno

Alternative-ingredient Recommendation Based on Co-occurrence Relation on Recipe Database
Ryosuke Yamanishi, Junichi Fukumoto, Aya Kaizaki, Yoko Nishihara & Naoki Shino

Wednesday 9 September, 11:00 – 13:00
Main Room

G08(1): Knowledge Management

Chair: Prof Ron Hartung

A Simile Recognition System using a Commonsense Sensory Association
Method
Eriko Yoshimura, Misako Imono, Seiji Tsuchiya & Hirokazu Watabe

EEG-Based Detection of TV Commercials Effects
Tomomi Nomura & Yasue Mitsukura

Development of ontology for information literary
Hiroko Kanoh, Motohiro Hasegawa, Takaaki Hishida & Kouji Kozaki

Adaptive global schema generation from heterogeneous metadata schemas
Zghal Rebai Rim, Zayani Zayani Amel, Mnif Mnif Fatma & Amous Amous Ikram

Abstracting Anonymization Techniques: A Prerequisite for Selecting a
Generalization Algorithm
Feten Ben Fredj, Isabelle Comyn-wattiau & Nadira Lammari

Towards a Formal Model of the Lean Enterprise
Pierre Masai, Pierre Parrend & Cecilia Zanni-merk

Wednesday 9 September, 11:00 – 13:00
Room 1

IS09(1): Skill Acquisition and Ubiquitous Human Computer Interaction

Chair: Prof Hirokazu Taki

A Transparent Emergency Warning System based on Cloud Servers and SNS
Taizo Miyachi, Gulbanu Buribayeva, Yutaro Mikami & Azamat Yeshmukhametov

Hand-motion analysis for development of double-unders skill
Shinya Yoshioka, Naka Gotoda & Kenji Matsuura

The analysis of the brain state measuring by NIRS-based BMI in answering yes-no questions
Kosuke Tanino, Noriyuki Matsuda, Hirokazu Miura & Hirokazu Taki

A preliminary experiment to investigate the effects of blue backgrounds for the concentration of elderly people
Atsuko Yamazaki & Kaoru Eto

Development of a Motion Learning Support System arranging and showing Several Coaches' Motion Data
Toshihiro Yoshinaga & Masato Soga

Golf Learning Environment enabling Overlaid Display of Expert's Model Motion and Learner's Motion using KINECT
Takahiro Kora, Masato Soga & Hirokazu Taki

Wednesday 9 September, 11:00 – 13:00
Room 2

IS17(1): Intelligent Medical and Healthcare Informatics

Chair: Dr Yulia Hicks

An Evaluation of Image Enhancement Techniques for Nailfold Capillary Skeletonisation
Gerald Schaefer, Niraj Doshi & Shao Ying Zhu

CT Liver Segmentation using Artificial Bee Colony Optimisation
Gerald Schaefer, Shao Ying Zhu
Mohamed Abd Elfattah, Ahmed Fouad, Aboul Ella Hassanien, Hesham Hefny & Abdalla Mostafa

Probabilistic model to analyze patient accessibility to medical facilities using geographic information systems
Shunsuke Doi, Shinsuke Fujita, Hiroo Ide, Soichi Koike, Shinji Ogawa & Katsuhiko Takabayashi

Segmentation of Clock Drawings Based on Spatial and Temporal Features
Zainab Harbi

Automatic Classification of Facial Morphology for Medical Applications
Hawraa Abbas

Computer-aided surgical planning of anterior cruciate ligament reconstruction in MR images
Kento Morita, Satoru Aikawa, Syoji Kobashi & Masakazu Morimoto

Wednesday 9 September, 11:00 – 13:00
Room 3

IS26(1): Business Intelligence and Logistics Management in Ecommerce

Chair: Prof Xiangpei Hu

P-J Matching Model of knowledge workers
Lili Zhang & Wei Fei

Optimal Prices and Associated Factors of Product with Substitution for One
Supplier and Multiple Retailers Supply Chain
Wei Fei, Mu Du & Gang Luo

Research on Value Evaluation of E-commerce Business Model
Weiwei Li & Yue Dai

Long-term Collaboration Mechanism for Disruption Recovery Service in Public
Tram Systems
Yan Fang & Amy Zeng

Optimization of Postal Distribution Network Based on Rendezvous with
Heterogeneous Vehicles and Capacity Constraints
Li Sun, Jing Hou & Huimin Wang

Research of Oil Product Secondary Distribution Optimization Based on
Collaborative Distribution
Wang Xuping, Hongxin & Zhang Jun

Wednesday 9 September, 11:00 – 13:00
Room 4

IS19: Knowledge-Based Systems for e-Business

Chair: Prof Kazuhiko Tsuda

Standing in Line Behavior Extraction by Statistical Radio Information
Nobuo Suzuki & Kazuhiko Tsuda

An efficient prediction model for OTC medicine effect with the package
inserts information
Takashi Ikoma, Yoshikatsu Fujita, Masakazu Takahashi & Kazuhiko Tsuda

A Study on Deliberate Presumptions of Customer Payments with Reminder in
the Absence of Face-to-face Contact Transactions
Masakazu Takahashi, Hiroaki Azuma & Kazuhiko Tsuda

A Study on feature extraction of numerical evaluation in hotel reviews with
guest comments
Koichi Tsujii, Masakazu Takahashi & Kazuhiko Tsuda

Study on hiring decision: analyzing rejected applicants by mining individual
job placement data of Public Employment Service Offices
Hiromi Asano, Yoshikatsu Fujita, Koji Tanaka & Kazuhiko Tsuda

Knowledge construction for efficient workload estimation in software
development
Tsuyoshi Shida, Yoshikatsu Fujita & Kazuhiko Tsuda

Wednesday 9 September, 11:00 – 13:00
Room 5

G07: Natural Language Processing

Chairs: Dr Girish Nath Jha & Dr Gan Keng Hoon

Generalizing Hierarchical Structure of Indices for Japanese Legal Documents
Tho Le, Minh Nguyen & Akira Shimazu

Personalization of Trending Tweets using Like-Dislike Category Model
Weilin Lu & Keng Hoon Gan

Leveraging User Ratings for Resource-Poor Sentiment Classification
Ngo Xuan Bach & Tu Minh Phuong

Graph-based methods for Significant Concept Selection
Karim Gasmi, Maher Ben Jemaa, Lynda Tamine & Mouna Torjmen-khemakhem

Wednesday 9 September, 11:00 – 13:00
Room 6

G11(1): Intelligent Systems Applications and Miscellaneous Topics

Chair: Dr Carlos Toro

Towards a Timely Root Cause Analysis for Complex Situations in Large Scale Telecommunications Networks
Marc Schaaf, Erik Bunn, Stella Gatziu Grivas, Topi Mikkola, Holger Wache & Gwendolin Wilke

Simulation of electrohydrodynamic phenomenon using computational intelligence methods
Dr Hubert Wojtowicz

Cognitive Network Framework for Heterogeneous Wireless Networks
Mr Ahmed Al-saadi
Yulia Hicks & Rossitza Setchi

Applying Bipartite Network Approach To Scarce Data: Modeling Habitat Suitability Of A Marine Mammal Species
Chin Ying Liew, Jane Labadin, Cindy Peter, Andrew Alek Tuen & Yin Chai Wang

A mobile agent view synchronization system to uphold a trajectory data warehouse
Oueslati Wided, Hamdi Hazar, Akaichi Jalel & Dhouioui Zeineb

Development of Emotion-Weather Maps
Kazuo Misue & Kiyohisa Taguchi

Wednesday 9 September, 11:00 – 13:00
Room 7

IS16: Quantitative Method of Decision Making in Changing Financial and Social Environment

Chair: Prof Mieko Tanaka-Yamawaki

Verification of the Relationship Between the Stock Performance and the Randomness of Price Fluctuation
Mieko Tanaka-yamawaki, Yuuta Mikamoti & Xin Yang

Relationship between job opportunities and economic environments measured from data in internet job searching sites
Aki-Hiro Sato, Chihiro Shimizu, Ohnishi Takaaki, Mizuno Takayuki & Watanabe Tsutomu

Personal ID System by Means of Random Input Passwords
Mieko Tanaka-yamawaki, Yuki Tanaka & Katsutoshi Yoshii

Dynamic Stock Correlation Network
Yuta Arai, Hiroshi Iyetomi & Takeo Yoshikawa

Complex principle component analysis on dynamic correlation structure in price index data
Hiroshi Iyetomi, Dsc Yuta Arai & Yuichi Kichikawa

Wednesday 9 September, 14:00 – 16:00
Main Room

G08(2): Knowledge Management

Chair: Prof Ron Hartung

Media Characteristics and Social Networks-enabled Knowledge Integration in Cooperative Work
S LIANG & DC Hong

A Social Platform for Knowledge Gathering and Exploitation, Towards the Deduction of Inter-enterprise Collaborations
Aurélie Montarnal, Frédérick Bénaben, Jacques Lamothe, Matthieu Lauras, Sébastien Truptil & Tiexin Wang

A Hierarchical Decomposition Framework for modeling Combinatorial Optimization Problems
Marouene Chaieb, Jaber Jemai & Khaled Mellouli

Statistical and Semantic Approaches for Tweet Contextualization
Meriem Amina Zingla, Catherine Berrut, Chiraz Latiri & Yahya Slimani

Wednesday 9 September, 14:00 – 16:00
Room 1

IS09(2): Skill Acquisition and Ubiquitous Human Computer Interaction

Prof Hirokazu Taki

Proposition and Design of a Skill Learning Environment for Drawing onto 3D
Objects using AR
Kazuma Iwasako & Masato Soga

Development and Evaluation of a System for AR enabling Realistic Display of
Gripping Motions using Leap Motion Controller
Reiji Katahira & Masato Soga

Packet scheduling and access priority control for QoS and fairness in wireless
LAN
Kongsili Luangxay, Akihiro Fujimoto & Fumitaka Uchio

Color Distinctiveness Feature for Person Identification without face-
information
Peng Li, Qian Chen & Haiyuan Wu

Wednesday 9 September, 14:00 – 16:00
Room 2

IS17(2): Intelligent Medical and Healthcare Informatics & IS28: Diseases Diagnostic and Prognostic Systems Based on Digital Image Processing and Artificial Intelligence

Chair: Dr Yulia Hicks

Study of A Port Coordinator's Mental Workload Based on Facial Temperature
Koji Murai

Feature Extraction Method for Clock Drawing Test
Tomoaki Shigemori & Hiroharu Kawanaka

Improvement of Features Extraction Process and Classification of Cervical Cancer for the NeuralPap System
Siti Noraini Sulaiman, Fadzil Ahmad, Nor Ashidi Mat-isa & Nor Hayati Othman

Evaluating Denoising Performances of Fundamental Filters for T2-Weighted MRI Images
Iza Sazanita, Sailudin Darus, Muzaimi Mustapha & Siti Noraini Sulaiman

Neural network Techniques for Cancer Prediction: A Survey
Shikha Agrawal & Jitendra Agrawal

A Framework of MRI Fat Suppress Imaging Fusion System for Femur Abnormality Analysis
Belinda Chong, Aziz Ezane, Shuaib Ibrahim, Bee Ee Khoo & Nyah Umi

Wednesday 9 September, 14:00 – 16:00
Room 3

IS26 (2): Business Intelligence and Logistics Management in Ecommerce

Chair: Prof Xiangpei Hu

Pricing strategies in Dual-online Channels Based on Consumers' shopping Choice
Jieyu Lei, Junxiu Jia & Tao Wu

A Context-based Support System of Mobile Chinese Learning for Foreigners in China
Lijun Sun, Khalil Al-mekhlafi, Xiangpei Hu & Hou Jing

A Decision Method for Returns Logistics Based on the Customer's Behaviour in E-commerce
Wenjuan Wang

Optimizing variable opaque product design in E-commerce based on blind booking
Zhanghua Yan, Shizhen Bai & Lei Liu

Wednesday 9 September, 14:00 – 16:00
Room 4

IS22: Chance Discovery and Market of Data

Chair: Prof Akinori Abe

Visualizing History for Qualitative Explanation of Valuable Events using Tangle String
Yukio Ohsawa & Hayashi Teruaki

NFC-based Tangible User Interface for Information Curation and Its Application to Analogy Game
Yasufumi Takama, Hiroshi Ishikawa & Tomohiro Ito

Knowledge Structuring and Reuse System Using RDF for Supporting Scenario Generation
Teruaki Hayashi & Yukio Ohsawa

What type of information and scheme does the data market need?
Akinori Abe & Hiroki Hatanaka

Chance for Conversation Activation on Shopping Activities
Yuki Hayashi & Akinori Abe

Wednesday 9 September, 14:00 – 16:00
Room 5

IS14: Intelligent Transport Systems

Chair: Dr Milan Simic

The Role of Path Continuity in Lateral Vehicle Control
Mohamed Elbanhawi & Reza Jazar, Dr Milan Simic

Formal model for intelligent route planning
Maria Spichkova, Heinz Schmidt & Milan Simic

Laser and Vision Data Fusion in Motion Control and Mapping
Jeffery Young & Milan Simic

Hybrid vehicles with thermal energy recovery systems
Andrew Royale & Milan Simic

Ontology-based framework for risk assessment in road scenes using videos
Mahmud Mohammad, Yulia Hicks, Ioannis Kaloskampis & Rossitza Setchi

Wireless power transmission for UAV charging
Milan Simic, Cees Bil & Vuk Vojisavljevic

Wednesday 9 September, 14:00 – 16:00
Room 6

G11(2): Intelligent Systems Applications and Miscellaneous Topics

Chair: Dr Carlos Toro

A perspective on Knowledge Based and Intelligent systems implementation in Industrie 4.0
Carlos Toro, Iñigo Barandiaran & Jorge Posada

Evolving and discovering Tetris gameplay strategies
Somnuk Phon-amnuaisuk

A unified framework for semantic comparison of objects: extension to semantic graph comparison
Mounira Harzallah & Giuseppe Berio

A Web-Based Platform for Automated Diabetic Retinopathy Screening
José Tomás Arenas-Cavalli, Rodrigo Donoso, Mariano Pola & Sebastián Ríos

A semantically-based framework for continuous u-health services provisioning
Angel Jimenez-molina, Matias Echeverria & Sebastian Rios

An adaptive predictor for system property forecasting
Wilson Wang, Peter Luong & Josip Vrbanek

Wednesday 9 September, 14:00 – 16:00
Room 7

IS30: Data-driven Intelligent Systems

Chair: Dr Fangming Zhu

Tweet-mapping method for tourist spots based on now-tweets and spot-photos
Kenta Oku, Fumio Hattori & Kyoji Kawagoe

Prediction of Enterprise Purchases using Markov models in Procurement Analytics Applications
Adam Westerski, Henry Chang, Rajaraman Kanagasabai & Jiayu Wong

Hybrid User-Item Based Collaborative Filtering
Zhenzhen Fan & Nitin Pradeep Kumar

Auto-categorization of HS code using background net approach
Liya Ding, Dongliang Chen & Zhenzhen Fan

Enhancement of Classifiers in HTM-CLA Using Similarity Evaluation Methods
Fangming Zhu, Jahan Balasubramaniam & Gokul Krishnaa

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