**TIME TABLE (1/10)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1/10 | Room404 | | Room406 | | | Room407 | |
| 9:30~ | **Registration** | | | | | | |
| 10:00-11:40 |  | | GS8(5)RoboticsⅠ  Chair T. Sethaput | | | GS2(4)Complexity  Chair K. Kobayashi  (will be end at 11:20) | |
| 11:40-11:50 | Coffee break | | | | | | |
| 11:50-12:10 | Opening Ceremony (room405) | | | | | | |
| 12:10-13:00 | Lunch | | | | | | |
| 13:00-14:00 |  | | GS7(3)Pattern Recognition  J. Wang | | | GS3(3)Evolutionary computation  Chair S. Mabu | |
| 14:00-14:20 | Coffee break | | | | | | |
| 14:20-16:00 |  | | GS9(5)RoboticsⅡ  Chair Y. Morita | | | GS5(4)Neuromorphic  Systems  Chair T. Kondo  (will be end at 15:40) | |
| 16:00-16:20 | Coffee break | | | | | | |
| 16:20-18:00 |  | | GS10(5)RoboticsⅢ  Chair S. Kim | | | GS4(4)Intelligent Control  Chair J-M Lee.  ( will be end at 17:40) | |
|  | | | | | | | |
| GS1 Artificial intelligence(4)  GS2 Complexity(4)  GS3 Evolutionary computation(3)  GS4 Intelligent control(4)  GS5 Neromorophic systems & Neural  computation(4)  GS6 Poster Sessins(14)  GS7Pattern recognition (4)  GS8 RoboticsⅠ(5)  GS9 RoboticsⅡ(5)  GS10 RoboticsⅢ(5) | | | OS1 Intelligent Control(5)  OS2 Software Development Support Method (6)  OS3 Image Analysis, Human Interface, and Text Mining(5)  OS4 Graph Theory and Its Application(3)  OS5 Bio-Inspired Algorithms and Their Applications(3)  OS6 Computer Science and Information  Processing(4)  OS7 Computer Network and Security(3)  OS8 (5) Kansei Engineering(5) | | | | |
|  | | | | | | | |
|  | | | | | | | |
| TIME TEBLE (1/11) | | | | | | | |
| 1/11 | Room404 | Room405 | | Room406 | | | Room407 |
| 9:30～ | Registration |  | | | | | |
| 10:00-11:00 |  | PS(14)  Chair J. J Lee. | | Room201 | | | |
| Plenary Speech | | | |
| Prof. Kai-Tai Song | | | |
| 11:00-12:30 |  | Invited Speech | | | |
| IS-1  IS-2 IS-3 | Prof. Henrik H. Lund  Prof. Luigi Pagliarini  Dr. Jovana Jovic | | |
| 12:30-13:20 | Lunch | | | | | | |
| 13:20-15:00 |  | PS(14) | | GS1(4) Artificial intelligence  Chair M.Kubo | | | OS8(5)  Chair T.Hattori |
| 15:00-15:20 | Coffee break | | | | | | |
| 15:20-17:00 |  | PS(14) | | OS1(5) Intelligent control  Chair Y. Jia | | | OS3(5)  Chair: Y. Yoshitomi |
| 18:00-20:00 | Banquet: HOTEL HOKKE CLUB OITA | | | | | | |

**TIME TABLE (1/12)**

|  |  |  |  |
| --- | --- | --- | --- |
| **1/12** | Room404 | Room406 | Room407 |
| 9:30～ | Registration |  |  |
| 10:00-12:00 |  | OS5(3)+OS7(3)  Chair H. Furutani  Co-Chair Yamaba | OS2(6)  Chair T. Katayama  Co-Chair M. Sakamoto |
| 12:00-13:00 | Lunch | | |
| 13:00-15:20 |  | OS6(4)+OS4(3)  Chair M. Sakamoto  Chair: T. Ito |  |
| 15:30-16:30 | Farewell Party (3rd Floor: [Restaurant](http://ejje.weblio.jp/content/restaurant)) | | |

**OBJECTIVE**

The objective of this conference is the development of new technologies for artificial life and robotics which have been recently born in Japan and are expected to be applied in various fields. This conference will discuss new results in the field of artificial life and robotics.

**GENERAL SESSION TOPICS**

|  |  |
| --- | --- |
| **GS1** Artificial intelligence(4) | **GS2** Complexity(4) |
| **GS3** Evolutionary computation(3) | **GS4** Intelligent control(**4**) |
| **GS5** Neuromorphic systems | **GS6** Poster Sessions(14) |
| **GS7** Pattern recognition (4) | **GS8** RoboticsⅠ(5) |
| **GS9** RoboticsⅡ(5) | **GS10** RoboticsⅢ(5) |

**ORGANIZED SESSION TOPICS**

|  |  |
| --- | --- |
| **OS1** Intelligent Control | **OS2** Software Development Support Method |
| **OS3** Image Analysis, Human Interface, and Text Mining | **OS4** Graph Theory and Its Application |
| **OS5** Bio-Inspired Algorithms and Their Applications | **OS6** Computer Science and Information Processing |
| **OS7** Computer Network and Security | **OS8 Kansei Engineering** |

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Accepted papers will be published in the proceeding of ICAROB and some of high quality papers in the proceeding will be requested to re-submit their papers for the consideration of publication in an international journal ARTIFICIAL LIFE, COMPLEXITY AND ROBOTICS under negotiation. All correspondence related to the conference should be addressed to ICAROB Office.

**TECHNICAL PAPER INDEX**

**Room404: Room 405:Room 406: Room: 407**

***January 10(Saturday)***

**9:30- Registration (Room404)**

**Room 406**

**10:00-11:40 GS8(5)** **Robotics I**

**Chair: Thunyaseth Sethaput (Thammasat University, Thailand),**

GS8-1 *Production effects by form changes of autonomous decentralized FMSs with mind*

Kakeru Yokoi, Hidehiko Yamamoto, and Takayoshi Yamada (Gifu University, Japan)

GS8-2 *Development of an autonomous-drive personal robot “Improve the accuracy of object area determination by boundary detection”*

Mikiko Hirai, Eiji Hayashi (Kyusyu Institute of Technology, Japan)

GS8-3 *Construction of a supermicro sense of force feedback and vision for micro-objects:*

*development of a haptic device*

Yusei Ishii, Eiji Hayashi (Kyushu Institute of Technology, Japan)

GS8-4 *Error Recovery of Pick-and-Place Tasks in Consideration of Reusability of Planning*

Akira Nakamura, Kazuyuki Nagata, Kensuke Harada and Natsuki Yamanobe

(National Institute of Advanced Industrial Science and Technology (AIST), Japan)

GS8-5 *Design of Sliding Mode Controller for Droplet Position in EWOD Microfluidic System*

Thunyaseth Sethaput (Thammasat University, Thailand), Arsit Boonyaprapasorn (Chulachomkloa Royal Military Academy,Thailand)

**13:00-14:00 GS7(3) Pattern recognition**

**Chair: J. Wang (Beijing Jiaotong University**

G7-1 *Fast motion detection based on cross correlation*

Panca Mudjirahardjo, Joo Kooi Tan, Hyoungseop Kim and Seiji Ishikawa

Department of Control Engineering, Kyushu Institute of Technology

1-1 Sensuichou,Tobata-ku, Kitakyushu City, Fukuoka, 804-8550, Japan

GS7-2*Detecting moving objects on a video having a dynamic background*

FX Arinto Setyawan, Joo Kooi Tan, Hyoungseop Kim, Seiji Ishikawa

(Dept. of Control Engineering, Kyushu Institute of Technology, Japan)

GS7-3 *Study on the Target Recognition and Location Technology of industrial Sorting Robot based on Machine Vision*

Jiwu Wang1, Xianwen Zhang1, Huazhe Dou1

School of Mechanical, Electronic and Control Engineering, Beijing Jiaotong University  
Beijing 100044, China1

Sugisaka Masanori 2 Alife Robotics Corporation Ltd, Japan and Open University, United Kingdom2

**14:20-16:00 GS9(5) Robotics II**

**Chair: Yoshifumi Morita (Nagoya Institute of Technology, RIKEN-RSC, Japan)**

GS9-1 *Mechanism Designs for Bio-inspired Flapping Wing Robots*

Palakorn Tantrakool, Eakkachai Pengwang

(Institude of Field robotics (FIBO), King Mongkut’s University of Technology Thonburi,

Thailand)

GS9-2 *Effective rocking motion for inducing sleep in adults – Verification of effect of mother’s embrace and rocking motion –*

Keishi Ashida, Yoshifumi Morita (Nagoya Institute of Technology, RIKEN-RSC, Japan)

Ryojun Ikeura (Mie University, RIKEN-RSC, Japan)

Kiyoko Yokoyama (Nagoya City University, RIKEN-RSC, Japan)

Ming Ding, Yuki Mori (RIKEN-RSC)

GS9-3 *Postural Sway Response to Local Vibratory Stimulation in Young, Middle-aged and Elderly*

*People in Standing Position*

Ayaka Yamada, Eishi Nakamura, Noritaka Sato, Yoshifumi Morita

(Nagoya Institute of Technology, Japan)

Tadashi Ito, Yoshihito Sakai (National Center for Geriatrics and Gerontrogy, Japan)

Kazunori Yamazaki (Fujita Health University, Japan)

GS9-4 *Development of Unmanned Transport System for automated systems*

Hyunhak Cho1, Jungwon Yu2, Yeongsang Jeong2, Hansoo Lee2, Sungshin Kim2

1 Department of Interdisciplinary Cooperative Course: Robot Pusan National University, Busan, Korea

2 Department of Electrical and Computer Engineering Pusan National University,

Busan, Korea

GS9-5 *Localization method for AGV using gyro and IMU*

Moonho Park, EunKyeong Kim, Yeongsang Jeong, Hansoo Lee, Jungwon Yu, Sungshin Kim

Department of Electrical and Computer Engineering Pusan National University, Busan, Korea

**16:20-18:00 GS10(5) Robotics III**

**Chair: Sungshin Kim (Pusan National University, Busan, Korea)**

GS10-1 *On the Effects of Epigenetic Programming on the Efficiency of Incremental Evolution of*

*the Simulated Khepera Robot*

Yasuto Nishiwaki , Ivan Tanev and Katsunori Shimohara

(Graduate School of Science and Engineering, University of Doshisha, Japan)

GS10-2 *The Effect of Duration of Both Stages of Incremental Genetic Programming on its*

*Efficiency of Evolution of Snakebot*

N. Mukosaka, I. Tanev, K. Shimohara (Doshisha University, Japan)

GS10-3 *Design of an effective shoulder joint mechanism for an upper-limb exoskeleton robot.*

Masahito Akiyama, Kazuo Kiguchi (Kyushu University, Japan)

GS10-4 *A Machine Learning Approach to a Lateral Continuous Force Estimation for a Walking*

*Robot*

Yeoun-Jae Kim, Jun-Yong Lee and Ju-Jang Lee (KAIST, Korea)

GS10-5 *The Improvement of RobustRobot SLAM Algorithm Based on Sensor Fusion*

Jiwu Wang1, Shunkai Zheng1, Fangbo Liao1 (Beijing Jiaotong University, China1)

Sugisaka Masanori2(Alife Robotics Corporation Ltd, Japan and Open University, UK)2

**Room 407**

**10:00-11:40 GS2(4) Complexity**

**Chair: Kunikazu Kobayashi (Aichi Prefectural University, Japan)**

GS2-1*Interactive musical editing system to support human errors and offer personal*

*preferences for an automatic piano*

Kenji Tsunenari, Eiji Hayashi (Kyushu Institute of Technology, Japan)

GS2-2*Modeling of collaboration in design process Based on Channel Theory*

Patchanee Patitad, Hidetsugu Suto (Muroran Institute of Technology, Japan)

GS2-3 *Sterilizing system of ballast water using an arc discharge*

Piao shengxu, Jae-cheol Lee, Zheng Tao, Heeje Kim

(Electric Engineering Department, Pusan National University, Country)

GS2-4 *The design of medical ruby laser power supply system using LLC resonant*

*converter*

Jaecheol Lee, Piao shengxu, Zheng Tao, Heeje Kim

(Electric Engineering Department, Pusan National University, Korea)

**13:00-14:00 GS3(3) Evolutionary comutation**

**Chair: Shingo Mabu (Yamaguchi University, Japan)**

GS3-1*Online Rule Updating System Using Evolutionary Computation for Managing Distributed*

*Database*

Wirarama Wedashwara, Shingo Mabu, Masanao Obayashi and Takashi Kuremoto

(Yamaguchi University, Japan)

GS3-2 *Reinforcement Learning with Symbiotic Relationships for Multiagent*

*Environments*

Shingo Mabu, Masanao Obayashi and Takashi Kuremoto, (Yamaguchi University, Japan)

GS3-3 *Development of a Dividual Model Using a Modular Neural Network for*

*Human-Robot Interaction*

Toshiyuki Tanaka and Kunikazu Kobayashi (Aichi Prefectural University, Japan)

**14:20-16:00 GS5(4)Neuromorphic Systems**

**Chair Tadashi Kondo(Tokushima University)**

GS5-1 *Associative Memory with Class I and II Izhikevich Model*

Yoshika Osawa, Takashi Kohno (University of Tokyo, Japan)

GS5-2 *Medical image recognition of heart regions by deep multi-layered GMDH-type*

*neural network using principal component-regression analysis*

Tadashi Kondo, Junji Ueno and Shoichiro Takao (Tokushima University, Japan)

GS5-3 *Deep feedback GMDH-type neural network using principal component-regression*

*analysis and its application to medical image recognition of abdominal multi-organs*

Tadashi Kondo, Junji Ueno and Shoichiro Takao (Tokushima University, Japan)

GS5-4 *Synchronized Response to Grayscale Image Inputs in the Chaotic Cellular Neural Network*

Masayuki Fujiwara1, Akihiro Yamaguchi1, Masao Kubo2

(1 Fukuoka Institute of Technology, Japan)

(2 National Defense Academy of Japan)

**16:20-18:20 GS4(4)Intelligent control**

Jang-Myung Lee (Pusan National University)

GS4-1 *Design of Down Scaled Simulator to Apply the Flying Touch Method in Hot Rolling Process*

1Sung Jin Kim, 2Hyun Hee Kim, 3Min Cheol Lee (Pusan National University,Busan, 609-735, South Korea)

GS4-2.*Improving Accuracy of Inertial Measurement Unit using Discrete Wavelet Transform*

Jae-Hoon Jung, Dong-Hyuk Lee, Jang-Myung Lee (Pusan National University, South Korea)

GS4-3.*Outdoor Localization for Quad-rotor using Kalman Filter and Path Planning*

Ho-Yun Yu, Yo-Seop Hwang, Jang-Myung Lee (Pusan National University, South Korea)

GS4-4 *Distributed Terminal Backstepping Control for Multi-Agent Euler-Lagrange Systems*

Seong-Ik Han, Yun-Ki Kim, Chen-Hu (Pusan National University, South Korea)

***January 11 (Sunday)***

**9:30- Registration(404)**

**Room 405**

**10:00-16:40 PS(14) Poster Session**

**Chair: Ju-Jang Lee(KAST)**

PS-1

PS*-2*

PS-3

PS-4

PS-5

PS-6

PS-7

PS-8

PS-9

PS-10

PS-11

PS-12

PS-13

PS-14

**PS: Room 201 Plenary Speech(10:00-11:00)**

**Prof. Kai-Tai Song**

***Vision-Based Grasp Planning and Experiments of a Mobile Manipulator***

Yi-Fu Chiu, Kai-Tai Song(National Chiao Tung University, Taiwan)

**IS: Room 201 Invited Speech(11:00-12:30)**

**Prof. Henrik Hautop Lund**

**IS-1 *Combining playware exergaming with a mobile fitness app***

Emmanouil Giannisakis, Henrik Hautop Lund

(Technical University of Denmark, Denmark)

**Prof. Luigi Pagliarini**

**IS-2 *Parallel Relational Universes – experiments in modularity***

Luigi Pagliarini1,2 Henrik Hautop Lund1

(1 Centre for Playware, Technical University of Denmark,2 Academy of Fine Arts of Macerata, Via Berardi, Italy)

**Dr. Jovana Jovic**

**IS-3 *Identifying humanoid and human physical parameters***

Jovana Jovic, Eiichi Yoshida (AIST, Japan), Gentiane Venture (TUAT, Japan)

**Room 406**

**13:20-14:40 GS1(4) Artificial intelligence**

**Chair Masao Kubo(National Defense Academy of Japan, Japan)**

GS1-1 *Selecting Words and Notion Using Literary Data in the Integrated Narrative Generation System*

Jumpei Ono1, Takashi Ogata2 (Iwate Prefectural University, Japan)

GS1-2 *Evaluation of a Narrative Discourse Generation System Based on the Concept of “Norm and Deviation”*

Taisuke Akimoto (The University of Electro-Communications, Japan), and Takashi Ogata

(Iwate Prefectural University, Japan)

GS1-3 *An aggregating approach of target enclosure of robot swarm*

Masao Kubo1, Hiroshi Sato1, Akihiro Yamaguchi2, Akira Namatame1   
1 (National Defense Academy of Japan, Japan), 2 (Fukuoka Institute of Technology, Japan)

GS1-4 *Probability of mixing up a nearest neighbor robot under target enclosure by robot swarm*

Masao Kubo1, Hiroshi Sato1, Akihiro Yamaguchi2, Akira Namatame1   
1 (National Defense Academy of Japan, Japan), 2 (Fukuoka Institute of Technology, Japan)

**15:20-17:00 OS1(5) Intelligent control**

**Chair Yingmin Jia (Beihang University, P.R.China)**

**Co-Chair Weicun Zhang (University of Science and Technology Beijing, P.R.China)**

OS1-1 *Adaptive Multiple-Model Control of a Class of Nonlinear Systems*

Chao Yang and Yingmin Jia (The Seventh Research Division, Beihang University, Beijing,100191, P.R.China)

OS1-2 *Attitude reorientation of spacecraft with attitude forbidden zones*

Xuhui Lu and Yingmin Jia (The Seventh Research Division, Beihang University, Beijing,100191, P.R.China)

OS1-3 *Weighted Multiple Model Adaptive Control of Uncertain Plant: Benchmark Problem*

Weicun Zhang, Ya Wang, and Yuzhen Zhang (School of Automation and Electrical Engineering, University of Science and Technology Beijing, Beijing 100083, P.R.China)

OS1-4 *A Reduced-Complexity Interacting Multiple Model Algorithm for Location Tracking in Heterogeneous Observation*

Xiaoyan Fu and Yuanyuan Shang (College of Information Engineering，Capital Normal University, Beijing 100058, P.R.China)

OS1-5 *Single Image Dehazing on Mobile Device based on GPU Rendering Technology*

Yuanyuan Shang, Yue Meng, Xiuzhuang Zhou, Xiaoyan Fu, and Hui Ding ( College of Information Engineering, Capital Normal University, China; Beijing Engineering Research Center of High Reliable Embedded System, Capital Normal University, China)

**Room 407**

**13:20-15:00 OS8(5) Kansei Engineering**

**Chair Tetuo Hattori (Kagawa University)**

**Co-Chair Hiromichi Kawano (Dr., NTT-AT Co., Ltd.)**

OS8-1 *Investigation of Feature Quantity in Sound Signal and Feeling Impression Using PCA*

Yusuke Kawakami, Tetsuo Hattori (Kagawa University, Japan),

Hiromichi Kawano (NTT AT, Japan) Tetsuya Izumi (Micro-Technica Co., ltd., Japan)

OS8-2 *Automated Color Image Arrangement Method Using Curvature Computation in*

*Histogram Matching*

Yusuke Kawakami, Tetsuo Hattori, Yoshiro Imai, Haruna Matsushita (Kagawa University, Japan), Hiromichi Kawano (NTT AT, Japan), R.P.C. Janaka Rajapakse (Tainan National University of the Arts, Taiwan)

OS8-3 *Analysis of Navier-Stokes Equation from the Viewpoint of Advection Diffusion (II)*

*--- Approximate Solution ---*

Hiroki Sakamoto, Tetsuo Hattori (Kagawa University, Japan), Akiomi Tada (Japan)

Vanhoa Nguyen (Japan), Hiromichi Kawano (NTT AT, Japan)

OS8-4 *Analysis of Navier-Stokes Equation from the Viewpoint of Advection Diffusion (I)*

*--- Analytical Solution of Diffusion Equation* ---

Hiroki Sakamoto, Tetsuo Hattori (Kagawa University, Japan)

Akiomi Tada (Japan), Vanhoa Nguyen (Japan), Hiromichi Kawano (NTT AT, Japan)

OS8-5 *Change Detection Experimentation for Time Series data by New Sequential Probability Ratio*

Yoshihide Koyama, Tetsuo Hattori (Kagawa University, Japan)

Hiromichi Kawano (NTT AT, Japan), Katsunori Takeda (Canon IT Solutions Inc., Japan)

**15:20-17:00 OS3(5) Image Analysis, Human Interface, and Text Mining**

**Chair Yasunari Yoshitomi**

**Co-Chair Masayoshi Tabuse**

OS3-1 *Development of Mouse Cursor Control System Based on Face Direction Using Kinect*

Masayoshi Tabuse (Kyoto Prefectural Univ., Japan), Kaori Tamura (ISI Software Corp., Japan)

OS3-2 *Quantitative Evaluation of Facial Expressions and Movements of Persons While Using Video Phone*

Taro Asada1, Yasunari Yoshitomi1, Ryota Kato1, Masayoshi Tabuse1, and Jin Narumoto2

(1Kyoto Prefectural University, Japan)

(2Kyoto Prefectural University of Medicine, Japan)

OS3-3 *Facial Expression Recognition Using Facial Expression Intensity Characteristics of Thermal Image*

Yasunari Yoshitomi, Taro Asada, Ryota Kato, and Masayoshi Tabuse

(Kyoto Prefectural University, Japan)

OS3-4 *Method for Character Domain Extraction from Image Using Wavelet Transform*

Taiki Taniguchi1 and Yasunari Yoshitomi2

(1ZENSHO HOLDINGS Co., Ltd., Japan)

(2Kyoto Prefectural University, Japan)

OS3-5 *Classification of Japanese Documents and Ranking of Representative Documents Using Characteristic of Frequencies of Words*

Jun Kimura1, Yasunari Yoshitomi2, and Masayoshi Tabuse2

(1JustSystems Corp., Japan)

(2Kyoto Prefectural University, Japan)

**Room406**

**10:00-12:00 OS5(3) + OS7(3)**

**OS5(3) Bio-Inspired Algorithms and Their Applications**

**Chair Hiroshi Furutani**

**Co-Chair Kenji Aoki**

OS5-1 *Analysis of Genetic Disease Haemophilia A by Using Machine Learning*

Kenji Aoki, Makoto Sakamoto, Hiroshi Furutani (University of Miyazaki, Japan)

OS5-2 *Analysis of Asymmetric Mutation Model in Random Local Search*

Hiroshi Furutani, Yifei Du, Kenji Aoki, Makoto Sakamoto (University of Miyazaki, Japan)

OS5-3 *Hitting Time Analysis of OneMax Problem in Genetic Algorithm*

Y. Du, Q. Ma, k. Aoki, M. Sakamoto, H. Furutani (University of Miyazaki, Japan)

Y. Zhang (Qinghai University, China)

**OS7(3) Computer Network and Security**

**Chair Hisaaki Yamaba**

**Co-Chair Kentaro Aburada**

OS7-1 *An Authentication Method for Mobile Devices that is Independent of Tap-Operation on a*

*Touchscreen*

1Hisaaki Yamaba, 1So Nagatomo, 2Kentaro Aburada, 1Shinichiro Kubota,

1Tetsuro Katayama, 3Mirang Park, 1Naonobu Okazaki

1University of Miyazaki, 1-1, Gakuen-kibanadai nishi, Miyazaki, 889-2192, Japan

2Oita National College of Technology, 1-1, 1666, Maki, Oita, 870-015, Japan

3Kanagawa Institute of Technology, 1030, Shimo-ogino, Atsugi, Kanagawa, 243-0292, Japan

OS7-2 *Proposal of Security Evaluation System using User's Reviews and Permissions for Android Application*

Naonobu Okazaki, (University of Miyazaki, Japan)

Yoshihiro Kita, (Kanagawa Institute of Technology, Japan)

Kentaro Aburada, (Oita National College of Technology, Japan)

Mirang Park (Kanagawa Institute of Technology)

OS7-3 *Evaluation of Neighbors Based Routing for ad hoc networks*

Kentaro Aburada1, Hisaaki Yamaba2, Shinichiro Kubota2,

Tetsuro Katayama2, Mirang Park3, Naonobu Okazaki2

(1 Oita National College of Technology, Japan)

(2 University of Miyazaki, Japan)

(3 Kanagawa Institute of Technology, Japan)

**13:00-15:20 OS6(4)+OS4(3)**

**OS6(4) Computer Science and Information Processing**

**Chair Makoto Sakamoto**

**Co-Chair Yasuo Uchida**

OS6-1 *Sufficient spaces for seven-way four-dimensional Turing machines to simulate four-dimensional one-marker automata*

Makoto Nagatomo1, Makoto Sakamoto1, Hikaru Susaki1, Tuo Zhang1, Takao Ito2, Yasuo Uchida3, Tsunehiro Yoshinaga4, Satoshi Ikeda1, and Hiroshi Furutani1

1:University of Miyazaki, 2:Hiroshima University,

3:Ube National College of Technology, 4:Tokuyama College of Technolory (Japan)

OS6-2 *Some Properties of k-Neighborhood Template A-Type Three-Dimensional Bounded Cellular Acceptors*

Makoto Sakamoto1, Makoto Nagatomo1, Hikaru  Susaki1, Tuo Zhang1, Takao Ito2, Yasuo Uchida3, Tsunehiro Yoshinaga4, Satoshi Ikeda1, and Hiroshi Furutani1

(1University of Miyazaki, Japan, 2Hiroshima University, Japan, 3Ube National College of Technology, Japan, 4Tokuyama College of Technology, Japan)

OS6-3 *Perfect Analysis in miniature Othello*

Yuki Takeshita1, Satoshi Ikeda2, Makoto Sakamoto3, Takao Ito4

(123Miyazaki University, Japan)

(4Hiroshima University, Japan)

OS6-4 *A proposal for teaching programming through the Five-Step Method*

Y. Uchida1, S. Matsuno1, T. Ito2, M. Sakamoto3

(1National Institute of Technology, Ube College, Japan)

(2Hiroshima University, Japan)

(3University of Miyazaki, Japan)

**OS4(3) Graph Theory and Its Application**

**Chair** **Takao Ito**

**Co-Chair Kensuke Ogata**

OS4-1 *The Role of National Standards Setter in the Global Convergence Era -In the Case of the Japanese Setter during the first decade-*

Ogata, K. (University of Nagasaki, Japan)

OS4-2 *An Empirical Research on Inter-firm Capital Relationship in Yokokai using IDE Spatial Model*

Takao Ito1, Makoto Sakamoto3, R. Mehta2, Tsutomu Ito4, and S. Ikeda3

1 Graduate School of Engineering, Hiroshima University, Higashi-Hiroshima, Japan

2 School of Management, New Jersey Institute of Technology, U.S.A

3 Dept. of Computer Science and Systems Engineering, University of Miyazaki, Japan

OS4-3 *Design and Experimental Evaluation of a Human Skill-Based PID Controller*

Yuntao Liao, Yamamoto Toru (Hiroshima University, Japan)

**Room 407**

**10:00-12:00 OS2(6) Software Development Support Method**

**Chair Tetsuro Katayama**

**Co-Chair Makoto Sakamoto**

OS2-1 *Prototype of a Supporting Tool to Generate Testing Communication Diagram*

Tetsuro Katayama\*, Seiya Urata\*, Yohei Ogata\*, Yoshihiro Kita†,

Hisaaki Yamaba\*, Kentaro Aburada‡ and Naonobu Okazaki\*

\*University of Miyazaki, 1-1 Gakuen-kibanadai nishi, Miyazaki, 889-2192 Japan

†Kanagawa Institute of Technology, 1030 Shimo-ogino, Kanagawa, 243-0292 Japan

‡Oita National College of Technology, 1666 Maki, Oita, 870-0152 Japan

OS2-*2 Code Coverage Visualization on a Web-Based Testing Tool for Java Programs*

Mochamad Chandra Saputra\*, Tetsuro Katayama†

\*Universitas Brawijaya, Jl. Veteran, Malang 65145, Indonesia

†University of Miyazaki, 1-1 Gakuen-kibanadai nishi, Miyazaki, 889-2192 Japan

OS2-3 *TFVIS: a Supporting Debugging Tool for Java Programs by Visualizing Data Transitions and Execution Flows*

Hiroto Nakamura\*, Tetsuro Katayama\*, Yoshihiro Kita†,

Hisaaki Yamaba\*, Kentaro Aburada‡ and Naonobu Okazaki\*

\*University of Miyazaki, 1-1 Gakuen-kibanadai nishi, Miyazaki, 889-2192 Japan

†Kanagawa Institute of Technology, 1030 Shimo-ogino, Kanagawa, 243-0292 Japan

‡Oita National College of Technology, 1666 Maki, Oita, 870-0152 Japan

OS2-4*Proposal of a testing method using similarity of interleaving for Java multi-threaded programs*

Shoichiro Kitano\*, Tetsuro Katayama\*, Yoshihiro Kita†,

Hisaaki Yamaba\*, Kentaro Aburada‡ and Naonobu Okazaki\*

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OS2-5 *Proposal of a Modification Method of a Source Code to Correspond with a Modified Model in MDA.*

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OS2-6 *Prototype of a Decision Table Generation Tool from the Formal Specification*

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