Program Schedule

2015 International Conference on Advanced Robotics and Intelligent Systems Program

May 29

8:40-9:15

Registration

9:15-10:30

Best Paper Award Session
6th AB B425

10:30-10:45

Coffee Break

10:45-12:00

Best Presentation Paper Award Session
6th AB B425

12:00-13:20

Lunch

13:20-14:30

Keynote Speech 1
Humanoid and Human
Dr. Han Pang Huang
Chair: Prof. Kai-Tai Song

14:30-14:50

Coffee Break

14:50-17:00

Invited Industrial Session
Chair: Prof. Chin-Sheng Chen

1. NI 14:50~ 15:20
2. Kistler 15:20~15:50
3. TI 15:50~16:20
4. Aurotek 16:20~16:50

17:00-19:00

Welcome Reception

May 30

8:20-9:15

Registration

9:15-10:15

Session Track 1

AT1-1 TRB 231	AT1-2 TRB 235

10:15-10:30

Coffee Break

10:30-11:00

Opening Ceremony

11:00-12:10

Keynote Speech 2
Adaptive Neural Network Consensus Control of Nonlinear Multi-agent Systems
Dr. C. L. Philip Chen
Chair: Prof. Tzuu-Hseng S. Li

12:10-13:20

RST Committee Meeting ITC 801A	Lunch

13:20-14:35

Session Track 2

AT2-1 TRB 231	AT2-2 TRB 235

14:35-15:00

Coffee Break

15:00-16:15

Session Track 3

AT3-1 TRB 231	AT3-2 TRB 235

16:25-17:40

Session Track 4

AT4-1 TRB 231	AT4-2 TRB 235

18:00-20:00

Banquet

May 31

8:20-9:15

Registration

9:15-10:30

Session Track 5

AT5-1 TRB 231	AT5-2 TRB 232	AT5-3 TRB 234	AT5-4 TRB 235

10:30-10:45

Coffee Break

10:45-12:00

Session Track 6

AT6-1 TRB 231	AT6-2 TRB 232	AT6-3 TRB 234	AT6-4 TRB 235

12:00-14:00

ARIS-NCAR Committee Gathering

P.S. 6th AB: Sixth Academic Building, TRB: Hong-Yue technology Research Building
ITC: Integrated Technology Complex. Please see Conference Venue Map.

Parallel Sessions

ARIS 2015 Technical Sessions (29th May)

9:15 - 10:30	Best Paper Award
Session Chair: Ching-Chang Wong, Chih-Lyang Hwang, Kuang-Yow Lian	
Paper ID	**Title/Authors**
1073	Design and Development of Bio-Inspired Flapping Wing Aerial Vehicles Tao Zhang, The University of Sydney, Australia Chaoying Zhou, The University of Sydney, Australia Steven Su, Harbin Institute of Technology Shenzhen Graduate School, China
1087	A Novel Barcode System for Intelligent Automation Industry Wei-Sheng Chen, National Taipei University of Technology, Taiwan Kai-Wen Chen, National Taipei University of Technology, Taiwan Hui-Sheng Ni, National Taipei University of Technology, Taiwan Yung-Yao Chen, National Taipei University of Technology, Taiwan
1093	A Proposal of Right and Left Turning Mechanism for Quasi-Passive Walking Robot Fujio Ikeda, National Institute of Technology, Nagaoka College, Japan Shigehiro Toyama, National Institute of Technology, Nagaoka College, Japan
1112	Semi-automatically Simultaneous Localization and Mapping for Home Service Robots Chung-Lin Lee, National Cheng Kung University, Taiwan Hsiang-Ting Chen, National Cheng Kung University, Taiwan Yi-Bin Lin, National Cheng Kung University, Taiwan Wei-Hsin Yen, National Cheng Kung University, Taiwan Tzuu-Hseng S. Li, National Cheng Kung University, Taiwan
1116	Supporting in Physics-based eRobotics-Testbeds the Pervasive Employment of Intelligent Robot Manipulators Eric Guiffo Kaigom, RWTH Aachen University, Germany J¨urgen Roßmann, RWTH Aachen University, Germany

10:45-12:00	Best Presentation Paper Award
Session Chair: Ching-Chang Wong, Chih-Lyang Hwang, Kuang-Yow Lian	
Paper ID	**Title/Authors**
1036	Attitude Control of Quadrotor via Fuzzy Controller Shun-Hung Tsai, National Taipei University of Technology, Taiwan Ci-En He, National Taipei University of Technology, Taiwan Hung-Yi Lin, National Yang-Ming University
1100	A Method of Depth Improvement for Stereo System Based on Random Pattern Projection Mei-Yu Huang, National Taipei University of Technology, Taiwan Chin-Sheng Chen, National Taipei University of Technology, Taiwan

	Chien-Liang Huang, National Taipei University of Technology, Taiwan
1122	Comparison of Upper- and Lower- Limb Motor Imagery EEG Yi-Hung Liu, National Taipei University of Technology, Taiwan. Yu-Tsung Hsiao, National Taipei University of Technology, Taiwan. Wei-Chun Hsu, National Taiwan University of Science and Technology, Taiwan. Yun Chiang, Chung Yuan Christian University, Taiwan.
1131	3-D Object Recognition and Localization for Robot Pick and Place Application Employing a Global Area Based Descriptor Youngjin Moon, Asan Medical Center, Korea Jongseok Won, Seoul National University, Korea Dongheon Lee, Seoul National University, Korea
1060	Cooperative Formation Control of Small-Scale Unmanned Multi-Helicopters Using Potential Field and PSO-RGA Ching-Chih Tsai, National Chung-Hsiang University, Taiwan Zen-Chung Wang, National Chung-Hsiang University, Taiwan

ARIS 2015 Technical Sessions (30th May)

9:15 - 10:15	AT1-1. Kinematics, Dynamics and Control of Robots
Session Chair: Jin-Siang Shaw	
Paper ID	**Title/Authors**
1001	Vision-Based Coverage Navigation for Robot Trash Collection Task
1047	2-DOF PID with Reset Controller for 4-DOF Robot Arm Manipulator
1048	Nonlinear Dynamic Control of Mobile Inverted Pendulum
1049	Inverse Kinematics of Robot Manipulators with Offset Wrist

9:15 - 10:15	AT1-2. Intelligent Industrial Systems
Session Chair: Gwo-Ruey Yu	
Paper ID	**Title/Authors**
1115	Backing up Control of a Car-Like Robot
1007	An Economic Assistance Strategy for Autonomous Driving System
1117	Quality Assurance of Camera Zooming by Detecting Len-Shake
1079	Robot Vision To Recognize Both Object and Rotation for Robot Pick-And-Place Operation

13:20 - 14:35	AT2-1.kinematics, dynamics and control of robots
Session Chair: Chin-Sheng Chen	
Paper ID	**Title/Authors**
1091	Real-Time Coplanar NURBS Curve Fitting and Interpolation for 6-DOF Robot Arm
1097	Controlled Synchronization of Networked Mobile Manipulators under Switching Topologies
1119	Design and Simulation of a Quadruped Walking and Jumping Robot
1130	Simulation and Study of Robotic Slave Arm Operating Envelope

13:20 - 14:35	AT2-2. Applications of Automation and Intelligent systems
Session Chair: Prof. Shun-Hung Tsai and Dr. Hung-Yi Lin	
Paper ID	**Title/Authors**
1017	Control of Nonlinear Systems by Fuzzy Observer-Controller with Unmeasurable Premise Variables
1135	Robust Stabilization of a Class of Uncertain Time-Delay Fuzzy Bilinear Systems
1042	A Moving Object Tracking System Based on Support Vector Machines and Kalman Filter
1059	Attack-Resistant Power Management Scheme for Wireless Sensor Network
1034	Design of PV Charger System

15:00 - 16:15	AT3-1. Intelligent Sensing and Control for Robotic Systems
Session Chair: Prof. Chih-Ming Hsu	
Paper ID	**Title/Authors**
1032	Design and Fabrication of a Forearm Rehabilitation Device Using Shape Memory Alloy Actuator
1038	The Analysis of a Quadrotor with a Two Degree of Freedom Robotic Arm
1039	The Analysis of Passive Mechanism for Quadrotor Perching
1046	Development of Intelligent Robot Manipulator Equipped with Force Sensor and Vision System
1062	Co-Simulation for a Flexible Four-Bar Mechanism

15:00 - 16:15	AT3-2. Intelligent Signals, Sensors, and Systems
Session Chair: Prof. Sendren S.-D. Xu	
Paper ID	**Title/Authors**
1004	Evaluation of Ultrasound Combined with Chitosan for Body Weight and Local Fat Controlled in Mice
1029	A Hybrid Computational Intelligence for Optimal Control of Mobile Robots
1071	Application of Fuzzy Neural Networks to Autonomous Object Tracking in Aerial Mobile Robot Movement
1109	Non-Destructive Displaying Defects for Luminescence Image of Photovoltaic Panel Arrays
1129	Backstepping and Self-Organizing Fuzzy Control Hybridized for Linear Motor Single-Axis Robots

16:25 - 17:40	AT4-1. Design Optimization in Engineering and Industrial Applications
Session Chair: Prof. Po-Ting Lin and Yu-Cheng Chou	
Paper ID	**Title/Authors**
1005	An Artificial Immune System for Design Optimization of Active Magnetic Bearings
1088	Robust and User Preference-Oriented Design of Cooling Units for Transistor-Based Packaged Components
1104	Errors in Thermographic Camera Measurement Caused by Known Heat Sources and Depth Based Correction
1118	General Procedures for Design Synthesis of Optimization Structure in Multidisciplinary Design Optimization Problems
1132	Selection of Kernel Functions in Ensemble of Kernel Reliability Analyses (EKRA) for Design Optimization with Arbitrarily Distributed Uncertainties

16:25 - 17:25	AT4-2. Sensor, sensor networks and its applications
Session Chair: Tzuu-Hseng S. Li	
Paper ID	**Title/Authors**
1113	Combination of Face and Hand Gesture Recognition for Human Computer Interaction System
1030	A Novel Method of Distribution Power System Reconfiguration Using Parallel Cooperative Meta-Heuristics
1002	Design of Frequency Synthesizer with VCO Charged by Near Infrared for Bioinformatics and Healthcare Wireless Applications on Robotic Nurses
1136	A Novel Approach in Navigation of FPGA Robots in Robust Indoor Environment

ARIS 2015 Technical Sessions (31th May)

09:15 - 10:30	AT5-1. Nonlinear Dynamics and Chaos in Engineering Applications
Session Chair: Prof. Hsien-Keng Chen and Lap-Mou Tam	
Paper ID	**Title/Authors**
1065	Analysis Dynamics Characteristic of Active Vibration Isolation Chaotic System
1066	Image Encryption Algorithm Based on Active Vibration Isolation Chaotic System Signal
1072	Novel-Fuzzy-Model based Modeling and Control of Nonlinear Chaotic Systems with Uncertainty
1085	Microfluidic Mixing Using Chaotic Signals from the Chen-Lee System
1134	Applications of Fractional-Order Sprott Chaos Synchronization Method to Power Quality Detection

09:15 - 10:30	AT5-2. Applications of Novel Technologies toward the Smart Grid
Session Chair: Dr. Yu-Hsiu Lin	
Paper ID	**Title/Authors**
1089	Reactive Power Control of Single-Stage Three-Phase Photovoltaic System During Grid Faults Using 2D-RFCMANN
1099	Integrated Power Quality Recognition Systems in Micro-Grids
1125	Intelligent Classification for Non-intrusive Load Monitoring System in Power System Fault
1128	Application of Parallel Discrete CSS-EP for Generation Maintenance Scheduling of Power System
1133	A Novel Dual-Input Power Converter for Renewable-Energy Generation System

09:15 - 10:30	AT5-3. Biomaterials and Biomedical Engineering
Session Chair: Prof. Chung-Hsien Kuo、Meng-Yi Bai	
Paper ID	**Title/Authors**
1018	Development of Tea Tree Oil Encapsulated Chitosan Microparticles Using an Electrospray System: Synthesis, Characterizations and Anti-inflammatory Evaluations
1020	Effects of Microbubble Size on Ultrasound-Mediated Gene Transfection in Auditory Cells
1074	Effects of Specific Motor Expertise on the Performance of a Mental Rotation Task of Hands with Tools
1098	Power Treadmill Lower Limbs Exoskeleton Rehabilitation System Design and Implementation
1103	Nano-Micro-Particle Complexes as Pulmonary Drug Delivery System

09:15 - 10:30	AT5-4. Smart Sensing, Control, and Image Recognition Technologies
Session Chair: Prof. Hsien-I Lin	
Paper ID	**Title/Authors**
1033	QR Code Detection Using Convolutional Neural Networks
1078	Humanoid Robot Motion Imitation Using Kinect
1090	Redundancy Removal of Cloud Points in a RGB-D SLAM System
1111	Duffing-Like Equation for Magnetoresistive Sensors
1120	Prediction-Coverage-First Detection Scheduling for Energy Efficient Multi-Target Tracking

10:45 - 11:45	AT6-1. Intelligent automated system and its Applications
Session Chair: Prof. Yung-Yao Chen	
Paper ID	**Title/Authors**
1043	Vehicle Component Characterization by Infrared Thermal Imaging
1044	A Novel Modeling Method for Background Initialization
1051	Humanoid Intelligent Robot with Visual Interactive and Remote Control Interfaces
1080	Development of a Real-Time Drowsiness Warning System Based on an Embedded System

10:45 - 11:45	AT6-2. Recent Development of Brain-Computer Interface Systems in NTUT
Session Chair: Prof. Yi-Hung Liu and Wei-Chun Hsu	
Paper ID	**Title/Authors**
1075	Positive and Negative Emotion Classification Using EEG
1076	An EEG Study During Decision Making and Motor Imagery in Table-Tennis Return of Serve Tasks
1077	EEG-Based Classification Between Depressive and Non-Depressive Disorders
1082	Hybrid BCI System Based on SSVEP and P300 Potential for Healthcare Automation

10:45 - 11:45	AT6-3. Intelligent Robots
Session Chair: Prof. Fujio Ikeda	
Paper ID	**Title/Authors**
1057	Design of an Omnidirectional Palm-Tree Climbing Robot
1096	Conceptual Design of Master-Slave Exoskeleton for Motion Prediction and Control
1035	Fuzzy Obstacle Avoidance in Cooperative Multirobot Formation
1031	Spring-Loaded Type Robotic Mechanism and Sequential Procedure for Automatic Biopsy
1067	Design and Manufacturing of a Butterfly Robot

10:45-11:45	AT6-4. Flexible 2D and 3D Object Localization
Session Chair: Prof. Chun-Wei Yeh	
Paper ID	**Title/Authors**
1054	Dual-Sensor fusion for Obstacle Avoidance in Indoor Environment
1058	Dual Laser 3D Scanner for Random Bin Picking System
1101	Pose Estimation of Planar Object under Perspective Distortion
1094	Control Design and Implementation of Intelligent Vehicle with Robot Arm and Computer Vision

A