Welcome Message from Conference General Chairs

As the General Chair of the 2016 International Automatic Control Conference (CACS 2016), it is our great pleasure to welcome you to Taichung, Taiwan. CACS 2016 is hosted by Chinese Automatic Control Society(CACS) and National Chin-Yi University of Technology in Taiwan and is the annual international conference of CACS.

This conference will provide a great opportunity for professionals in automatic control, robotics and system science to present their newest design concept, research results and applications from all over the world. The three days conference will facilitates interactions among scholars and practitioners in all aspects of control and automation theory and technologies. It will benefit all participants for their future research work.

We greatly appreciate the technical sponsorship from Asian Control Association(ACA), IEEE Control Systems Society (IEEE CSS), IEEE Systems, Man and Cybernetics Society (IEEE SMC), the Society of Instrument and Control Engineers (SICE, Japan) and The Institute of Control, Robotics and Systems(ICROS, Korea). We are grateful for the Ministry of Science and Technology(MOST), Ministry of Education, Advanced Institute of Manufacturing with High-tech Innovations, National Chung Cheng University and National Chin-Yi University of Technology for their sponsorship. We would like to thank members of International Advisory Committee, Organizing Committee and International Program Committee for their excellent work to make CACS 2016 more successful. We also like to express our appreciation to the members of Awards Committee for their effort on best paper awards.

We thank all the authors and participants of CACS2016 for their contribution to the conference. Taichung is a beautiful city in the center part of Taiwan with famous landscape and warm friendship. We invite you to explore the surroundings and enjoy local culture. We cordially hope you have a wonderful time and a fruitful CACS 2016 in Taiwan.

Kai-Tai Song
National Chiao Tung University
President of CACS

Wen-Tsai Sung
National Chin-Yi University of Technology
General Chair

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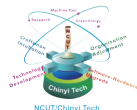Ministry of Science and Technology

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VENUE FLOOR PLAN

長榮桂冠酒店(台中)2F 位置平面圖
Evergreen Laurel Hotel (Taichung) 2F Plan

冠品廳
Chevalier
Teppanyaki

電梯
Elevator

香港廳
Hong Kong Room
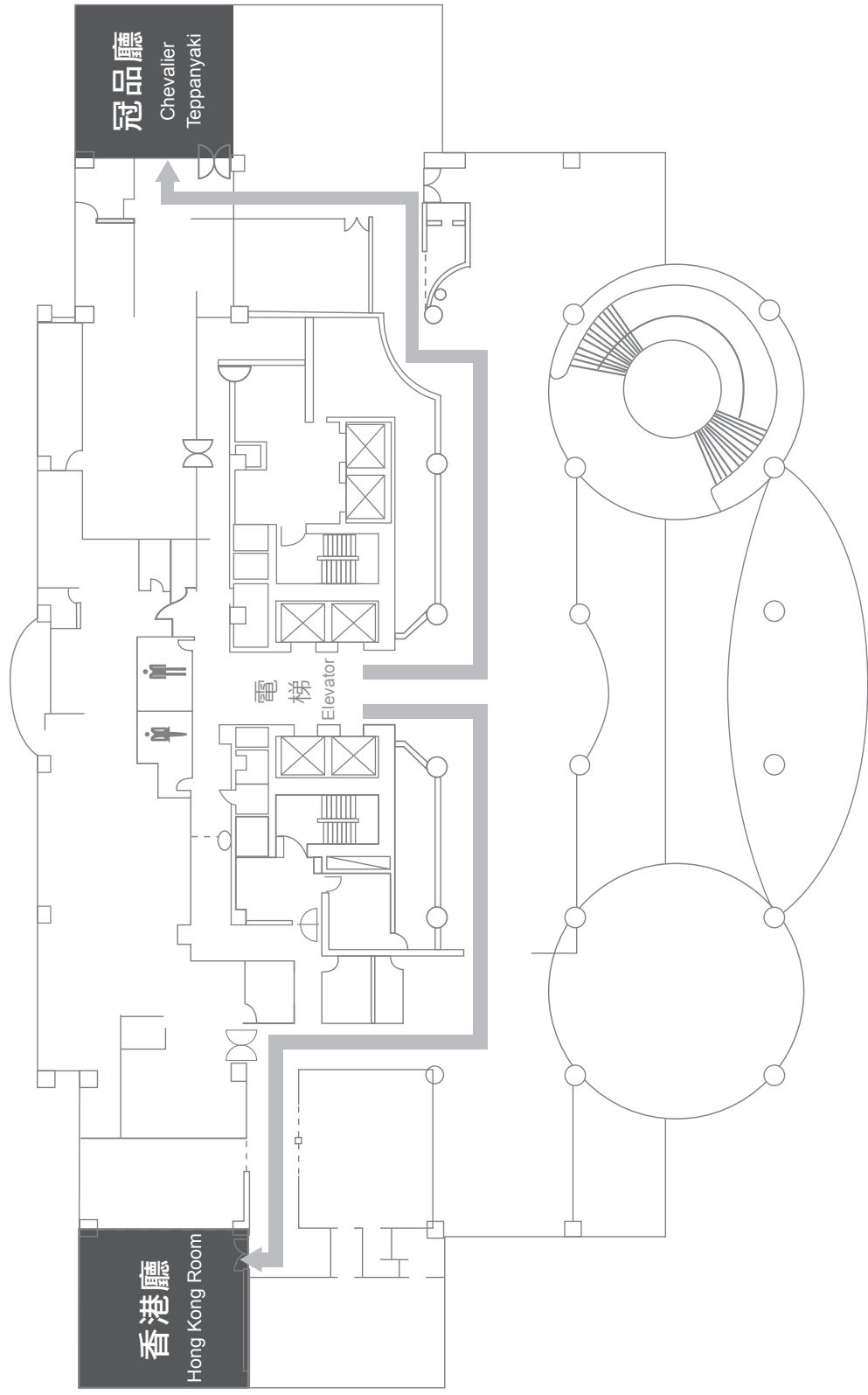
長榮桂冠酒店(台中)16F 位置平面圖
Evergreen Laurel Hotel (Taichung) 16F Plan

上海廳
Shanghai Room

花園
Garden

電梯
Elevator

酒吧
Sky Lounge

紐約廳
New York Room
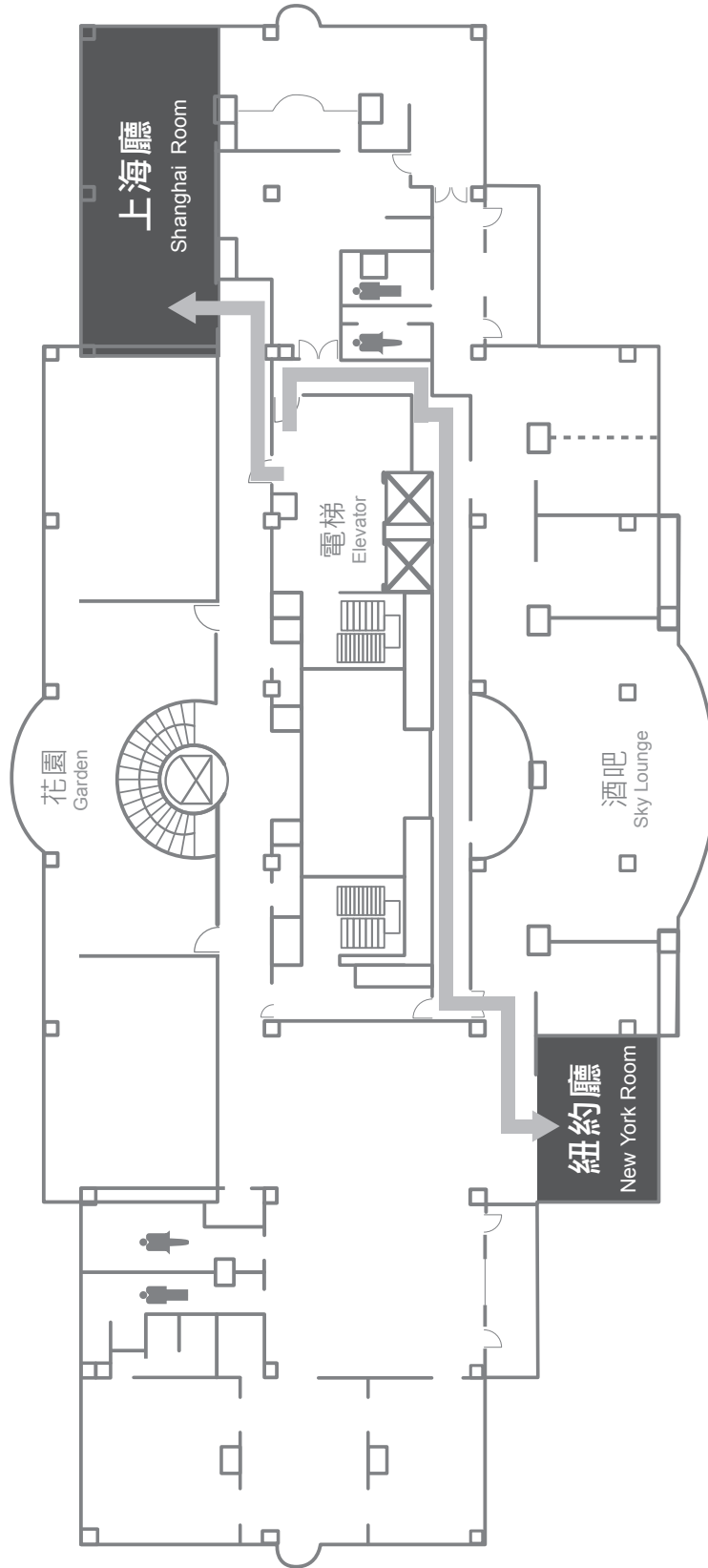
B1F菁英廳位置平面圖
B1F Videoconference Center Plan

菁英廳
Videoconference
Center

電梯
Elevator
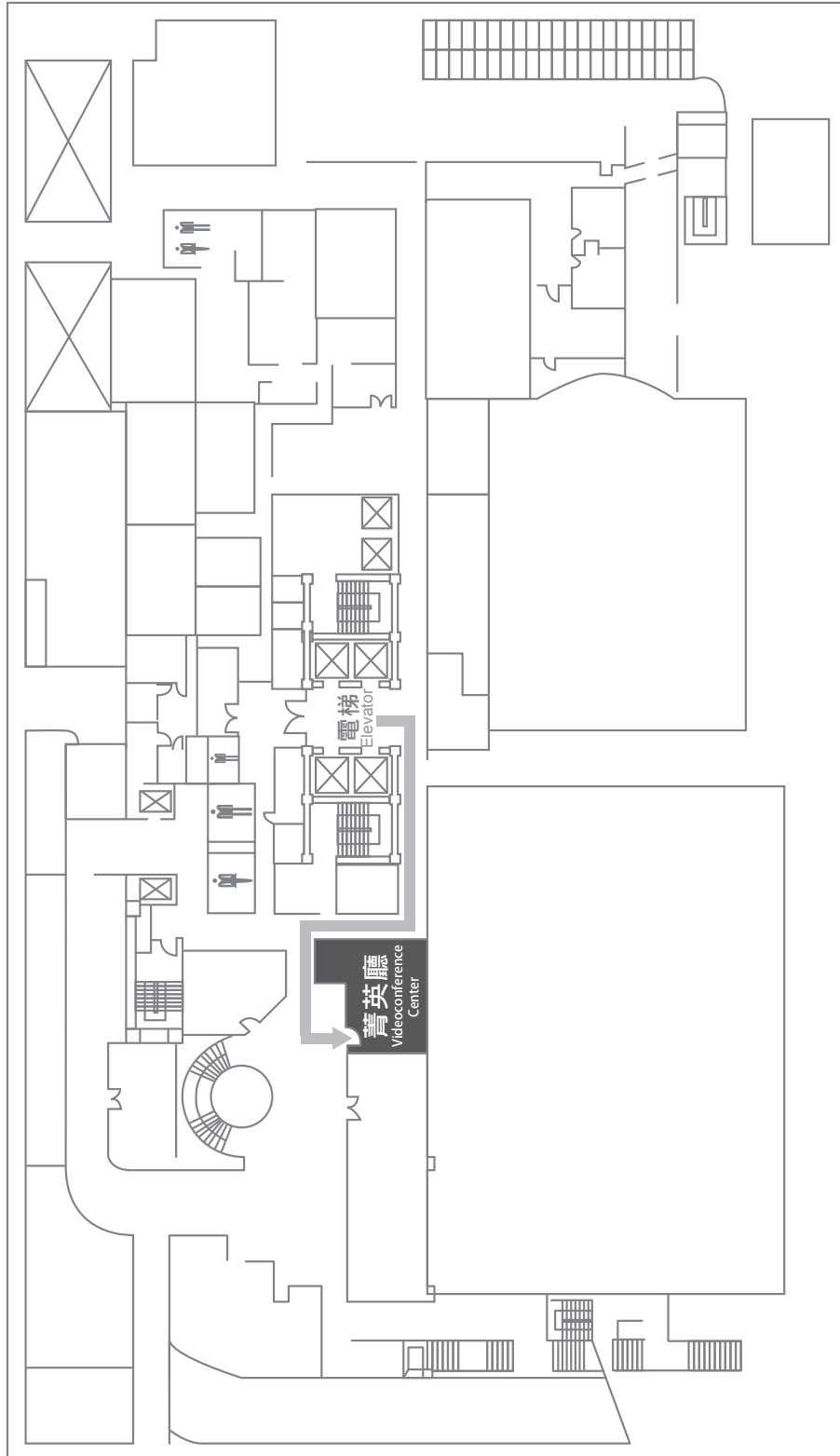
長榮桂冠酒店(台中)B2F位置平面圖
Evergreen Laurel Hotel (Taichung) B2F Plan

桂冠廳 II
The Laurel Ballroom II

桂冠廳 I
The Laurel Ballroom I

漢口廳
Han Kou Room

文心廳
Wen Hsin Room

中港廳
Chung Kang Room

電梯
Elevator

長榮廳 I
Evergreen Salon I
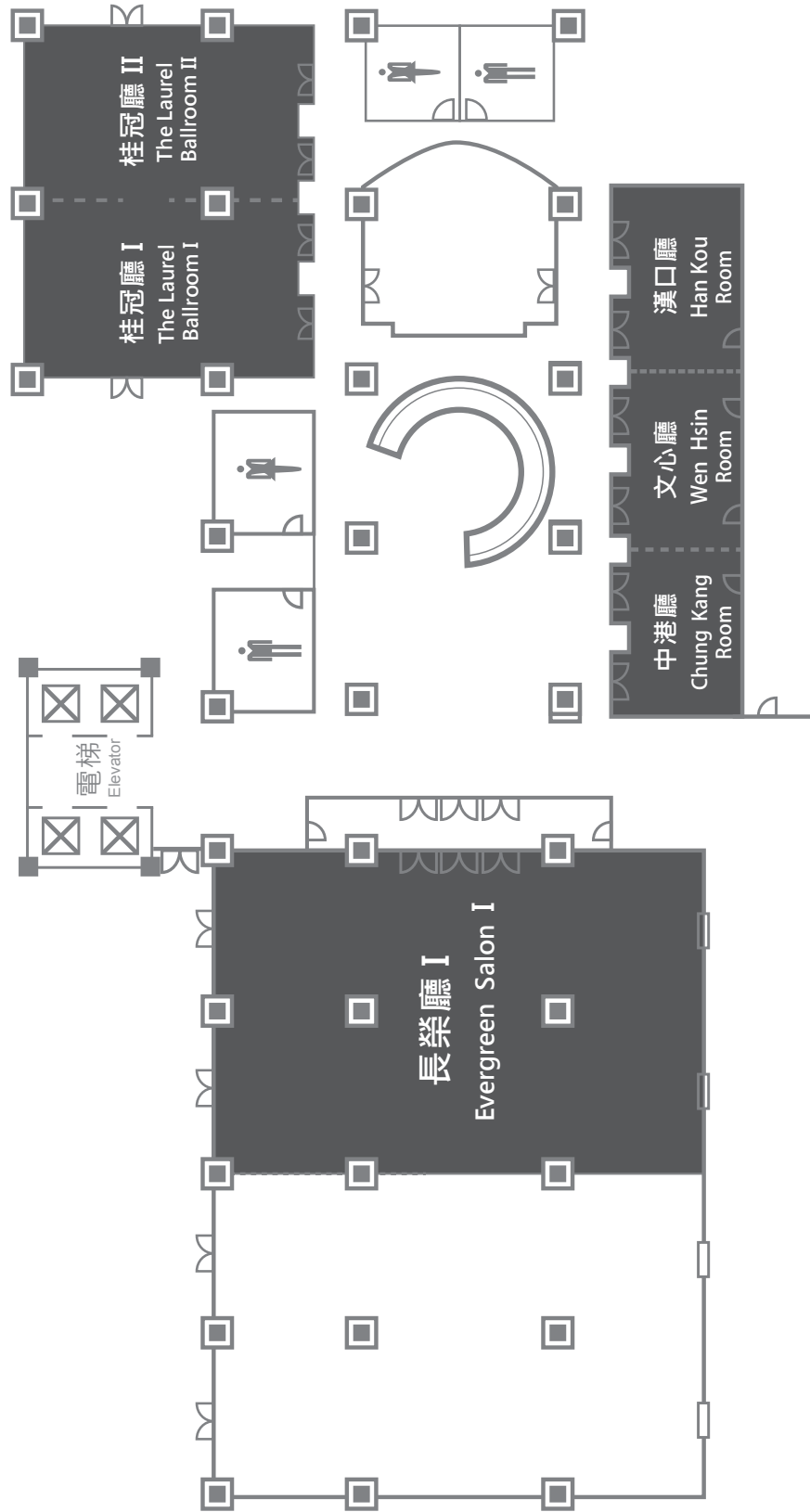
PLENARY SPEECH (I)

Room: Evergreen Salon I (B2)
Time: 14:00 - 15:00, Nov. 09, 2016

Keynote Speaker: Prof. Janusz Kacprzyk

Distributed Human/Social Inspired Computation Systems Based on Information and Knowledge Sharing

Prof. Janusz Kacprzyk

Fellow of IEEE and IFSA
Professor of Systems Research Institute, Polish Academy of Sciences, Warsaw, Poland

Abstract

We are concerned with broadly perceived distributed information systems, networks, etc. the very essence of which is reflected in, for instance, many modern technological and social phenomena like social networks, the internet of things, etc. We assume that such systems can involve technical devices (e.g. robots, computer systems), human beings (individuals, groups and maybe even organizations), software agents, etc. They constitute a (possibly) synergistic combination of technology, people and organization aimed at facilitating the communication, cooperation, collaboration, coordination, etc. They should possibly contribute to a more effectively and efficiently functioning to attain some common/shared goal, with mutual benefits for the participating parties. Meanwhile, biologically inspired computing paradigms, exemplified by broadly perceived evolutionary computation, immunological, swarm intelligence, ant colony, etc. models have recently attracted much attention in the research community and have shown a considerable potential for solving many complicated real world problems. One can however view them as based on inspirations from primitive living organisms or their colonies. An immediate question is whether it would make sense to devise models based on inspirations from more sophisticated human behavior inspirations, both at the level of individuals and groups. Human individuals or human groups exhibit some sophisticated types of rationality, emotions, and other feelings, and there is usually a leader(s) in social groups. To be more specific, we deal with some new computation paradigms in the context of decision making type models. We consider both the decision analytic type and game theoretic types of models, and present some examples of experiments, mainly obtained in the area of behavioral economics and neuroeconomiccs, which clearly suggest a

discrepancy between solutions adopted by humans and obtained by using directly the traditional decision analytic and game theoretic models that are in principle based on a greedy utility maximization. In our study, we emphasize what has been experimentally shown in many cases of real world human decision making that a human being is in general not a deliberate, hence slow, decision maker driven by a greedy and selfish utility maximization, which is a point of departure to traditional formal models, but is rather an emotional, fast decision maker who is often willing to faster arrive at a decision, even if it is "worse", and – what is maybe more important – whose behavior is often motivated by a willingness to be fair to others, expecting a reciprocal reaction. Consequently, we finish with a message that what has been so far considered as a collaborative or cooperative system approach, sometimes depending on the author's preference. That should be meant in fact as a coordinative-collaborative-cooperative systems approach to be able to grasp more aspects and issues related to a crucial role of human beings in the system, who is however working with inanimate beings like robots, software agents, etc., in a complex setting of common, shared, competitive, conflicting, etc. preferences, goals, etc., and a variety of selfish, and fair, or even altruistic, types of attitudes and behaviors.

Biography

Professor Janusz Kacprzyk graduated from Warsaw University of Technology, Poland, with M.Sc. in automatic control and computer science, obtained in 1977 Ph.D. in systems analysis and in 1991 D.Sc. in computer science. He is Professor of Computer Science at the Systems Research Institute, Polish Academy of Sciences, and at WIT – Warsaw School of Information Technology, and Professor of Automatic Control at PIAP – Industrial Institute of Automation and Measurements, and Department of Electrical and Computer Engineering, Cracow University of Technology. He is Honorary Foreign Professor at the Department of Mathematics, Yli Normal University, Xinjiang, China, and Visiting Scientist at RIKEN Brain Research Institute, Tokyo, Japan. He is Full Member of the Polish Academy of Sciences, Member of Academia Eueopaea (Informatics), Member of European Academy of Sciences and arts (Technical Sciences), Foreign Member of the Spanish Royal Academy of Economic and Financial Sciences (RACEF), and Foreign Member of the Bulgarian Academy of Sciences. He is Fellow of IEEE, IFSA, ECCAI and MICAI. He has been a frequent visiting professor in the USA, Italy, UK, Mexico, China. His main research interests include the use of modern computation computational and artificial intelligence tools, notably fuzzy logic, in decisions, optimization, control, data analysis and data mining, with applications in databases, ICT, mobile robotics, etc. He is the editor in chief of 6 book series at Springer, and of 2 journals, and is on the editorial boards of ca. 40 journals. He is a member of the Adcom of IEEE CIS, and was a Distinguished Lecturer of IEEE CIS. He received many awards: 2006 IEEE CIS Pioneer Award in Fuzzy Systems, 2006 Sixth Kaufmann Prize and Gold Medal for pioneering works on soft computing in economics and management, 2007 Pioneer Award of the Silicon Valley Section of IEEE CIS for contribution in granular computing and computing in words, 2010 Award of the Polish Neural Network Society for exceptional contributions to the Polish computational intelligence community, IFSA 2013 Award for his lifetime achievements in fuzzy systems and service to the fuzzy community, and the 2014 World Automation Congress Lifetime Award for contributions in soft computing. He is President of the Polish Operational and Systems Research Society and Past President of International Fuzzy Systems Association. In September 2015, he was awarded the title Fellow of the Mexican Society of Artificial Intelligence, and Permanent Honorary Member of the Society.

PLENARY SPEECH (II)

Room: Evergreen Salon I (B2)
Time: 15:20 - 16:20, Nov. 09, 2016

Keynote Speaker: Prof. Jun Wang

Collaborative Neurodynamic Optimization Approaches to Optimization

Prof. Jun Wang

Fellow of IEEE and IAPR
Chair Professor of Computer Science Department, City University of Hong Kong, China

Abstract

The past three decades witnessed the birth and growth of neurodynamic optimization which has emerged and matured as a powerful approach to real-time optimization due to its inherent nature of parallel and distributed information processing and the hardware realizability. Despite the success, almost all existing neurodynamic approaches work well only for convex and generalized-convex optimization problems with unimodal objective functions. Effective neurodynamic approach to constrained global optimization with multimodal objective functions is rarely available. In this talk, starting with the idea and motivation of neurodynamic optimization, I will review the historic review and present the state of the art of neurodynamic optimization with many individual models for convex and generalized convex optimization. In addition, I will present a multiple-time-scale neurodynamic approach to selected constrained optimization. Finally, I will introduce population-based collaborative neurodynamic approaches to constrained distributed and global optimization. By deploying a population of individual neurodynamic models with diversified initial states at a lower level coordinated by using some global search and information exchange rules (such as PSO and DE) at a upper level, it will be shown that many constrained global optimization problems could be solved effectively and efficiently.

Biography

Jun Wang is the Chair Professor Computational Intelligence in the Department of Computer Science at City University of Hong Kong. Prior to this position, he held various academic positions at Dalian University of Technology, Case Western Reserve University, University of North Dakota, and the Chinese University of Hong Kong. He also held various short-term visiting positions at USAF Armstrong Laboratory, RIKEN Brain Science Institute, Dalian University of Technology, Huazhong University of Science and Technology, and Shanghai Jiao Tong University (Changjiang Chair Professor). He received a B.S. degree in electrical engineering and an M.S. degree in systems engineering from Dalian University of Technology and his Ph.D. degree in systems engineering from Case Western Reserve University. His current research interests include neural networks and their applications. He published about 200 journal papers, 15 book chapters, 11 edited books, and numerous conference papers in these areas. He is the Editor-in-Chief of the IEEE Transactions on Cybernetics. He also served as an Associate Editor of the IEEE Transactions on Neural Networks (1999-2009), IEEE Transactions on Cybernetics and its predecessor (2003-2013), and IEEE Transactions on Systems, Man, and Cybernetics – Part C (2002–2005), as a member of the editorial board of Neural Networks (2012-2014), editorial advisory board of International Journal of Neural Systems (2006-2013. He was an organizer of several international conferences such as the General Chair of the 13th International Conference on Neural Information Processing (2006) and the 2008 IEEE World Congress on Computational Intelligence, and a Program Chair of the IEEE International Conference on Systems, Man, and Cybernetics (2012). He has been an IEEE Computational Intelligence Society Distinguished Lecturer (2010-2012, 2014-2016). In addition, he served as President of Asia Pacific Neural Network Assembly (APNNA) in 2006 and many organization s such as IEEE Fellow Committee; IEEE Computational Intelligence Society Awards Committee; IEEE Systems, Man, and Cybernetics Society Board of Governors,   He is an IEEE Fellow, IAPR Fellow, and a recipient of an IEEE Transactions on Neural Networks Outstanding Paper Award and APNNA Outstanding Achievement Award in 2011, Neural Networks Pioneer Award from IEEE Computational Intelligence Society (2014), among others.

PLENARY SPEECH (III)

Room: Evergreen Salon I (B2)
Time: 16:20 - 17:20, Nov. 09, 2016

Keynote Speaker: Prof. PAUL P. LIN

The Practical Aspects of Fault Detection, Fault Isolation and System Reconfiguration

Prof. PAUL P. LIN

Fellow of ASME
Associate Dean of Engineering College, Cleveland State University, USA

Abstract

In many engineering applications, such as chemical plants, nuclear power plants, aircrafts and vehicles, the ability to accurately detect and identify faults, followed by system reconfiguration is critical. Generally speaking, there are three types of faults, namely sensor faults, actuator faults and process faults. Most studies in fault diagnosis have been on the process faults, assuming that sensors and actuators are not faulty. Nevertheless, combination of multiple types of faults can lead to false detection and isolation of faults. Although many techniques for fault detection and isolation (better known as FDI) have been developed and published, there are, in general, two approaches in FDI, model-based and model-free. This study uses some MIMO (Multiple Inputs and Multiple Outputs) systems to illustrate the difference between using the approaches. The possibility of false detection or complete misdetection due to simultaneous multiple faults presents a big concern in FDI. Finally, a control strategy to automatically reconfigure a faulty system is proposed.

Biography

Dr. Paul P. Lin is a lifetime Fellow of American Society of Mechanical Engineering (ASME) who received his Ph.D. in Mechanical Engineering from University of Rhode Island, USA in 1985. He has been with Cleveland State University as faculty since 1985, where he became the ME Department Chair in 2002, and Associate Dean of Engineering since 2007 until present. His research areas of interest include Robotics, Design Optimization, Optical Inspection, Intelligent System Monitoring, and Fault Diagnosis. He has conducted several key research projects with NASA and US Air Force. With the NASA Glenn Research Center, he developed fast multidisciplinary design optimization technique using Taguchi methods and soft computing to optimize the engine cycle design of next generation aircraft. In addition, he also developed an intelligent system for NASA to monitor the microgravity environment quality onboard the International Space Station. With the US Air Force, he developed an optical technique to quantify the F- 16 aircraft tire deformation subject to dynamic loading, such as during take-off and landing. His recent research interest has been in the area of fault detection, fault isolation and system reconfiguration using model-based and model-free techniques. He has published over 50 refereed journal and conference papers, served as editor and reviewer for journals and conferences, as well as the keynote speaker for seven conferences since 2010. Furthermore, his administrative accomplishments and industrial expereince as well as interaction with local insdustry won him the Leadership Award in 2009 from Cleveland Engineering Society.

PLENARY SPEECH (IV)

Room: Evergreen Salon I (B2)
Time: 13:30 - 14:30, Nov. 10, 2016

Keynote Speaker: Prof. Tong-Heng Lee

Developments in Intelligent Systems for Autonomous & Automated Engineering Systems

Prof. Tong-Heng Lee

Professor of Electrical and Computer Engineering Department, National University of Singapore (NUS), Singapore

Abstract

In this talk, presentation will be made of recent newer developments on innovations in the tools/ methodologies of Intelligent Systems, Platforms & Technologies --- particularly those of autonomous systems (such as autonomous vehicles), discrete-event systems, hybrid systems, the concept of bisimulation/bi-similar systems and communicating sequential processes --- which now all play important roles in the development of newer types of Intelligent Autonomous & Automated Engineering Systems. The presentation will firstly, consider pertinent general recent developments in intelligent automation, mechatronics and systems; and then more specifically, consider the development of an intelligent and hybrid control structure for Autonomous Vehicles, which covers the control sub-module interactions, and captures the discrete nature of the decision making unit and continuous evolution of the system collectively. The various newer innovations needed of newer classes of Intelligent Systems and Technologies will be discussed. In all of the above, which is an instance of a newer class of an Intelligent Automated Engineering System, the presentation will also carefully describe how the computer science/computer engineering elements of discrete-event systems, hybrid systems, the concept of bi-simulation/bi-similar systems and communicating sequential processes play crucial roles in ensuring the successful deployment of the system.

Biography

Tong Heng Lee received the B.A. degree with First Class Honours in the Engineering Tripos from Cambridge University, England, in 1980; the M.Engrg. degree from NUS in 1985; and the Ph.D. degree from Yale University in 1987. He is a Professor in the Department of Electrical and Computer Engineering at the National University of Singapore (NUS); and also a Professor in the NUS Graduate School, NUS NGS. He was a Past Vice-President (Research) of NUS. Dr. Lee's research interests are in the areas of adaptive systems, knowledge-based control, intelligent mechatronics and computational intelligence. He currently holds Associate Editor appointments in the IEEE Transactions in Systems, Man and Cybernetics; Control Engineering Practice (an IFAC journal); and the International Journal of Systems Science (Taylor and Francis, London). In addition, he is the Deputy Editor-in-Chief of IFAC Mechatronics journal. Dr. Lee was a recipient of the Cambridge University Charles Baker Prize in Engineering; the 2004 ASCC (Melbourne) Best Industrial Control Application Paper Prize; the 2009 IEEE ICMA Best Paper in Automation Prize; and the 2009 ASCC Best Application Paper Prize. He has also co-authored five research monographs (books), and holds four patents (two of which are in the technology area of adaptive systems, and the other two are in the area of intelligent mechatronics). Dr. Lee was an Invited Panelist at the World Automation Congress, WAC2000 Maui U.S.A.; an Invited Keynote Speaker for IEEE International Symposium on Intelligent Control, IEEE ISIC 2003 Houston U.S.A.; an Invited Keynote Speaker for LSMS 2007, Shanghai China; an Invited Expert Panelist for IEEE AIM2009; an Invited Plenary Speaker for IASTED RTA 2009, Beijing China; an Invited Keynote Speaker for LSMS 2010, Shanghai China; an Invited Keynote Speaker for IASTED CA 2010, Banff Canada; an Invited Keynote Speaker for IFTOMM ICDMA 2010, Changsha China; an Invited Keynote Speaker for ICUAS 2011, Denver USA; an Invited Keynote for IEEE CISRAM 2011 Qingdao; an Invited Keynote for IASTED EAS 2012 Colombo; and also an Invited Keynote for IEEE ICCSE 2014 Vancouver.

Plenary Panel Discussion

Trend in Intelligent Systems, Robotics and Internet of Control
14:50 - 16:50, Thursday Nov. 10, Evergreen Salon I

It is our great pleasure to hold a plenary panel discussion at CACS 2016. The theme of the panel is *Trend in Intelligent Systems, Robotics and Internet of Control*. We are honored that six distinguished professors will join this panel and share their visions and experiences in control research and education. This panel will give the audience a direct contact with world-renowned scholars. You are cordially invited to participate in this plenary panel discussion on Thursday 11/10 14:50~16:50.

Chair:
    Prof. Kai-Tai Song, National Chiao Tung University, President of CACS

Panelists:
    Prof. Li-Chen Fu, National Taiwan University, IEEE Fellow & IFAC Fellow
    Prof. T. H. Lee, National University of Singapore, President of ACA
    Prof. Yoshito Ota, Kyoto University, Vice President of SICE
    Prof. Tsu-Chin Tsao, University of California Los Angeles, Fellow of ASME
    Prof. Keum-Shik Hong, Pusan National University, Vice President of ACA
    Prof. Jay Katupitiya, University of New South Wales

Brief biographies of the chair and panelists in an alphabetic order:

Li-Chen Fu received the B.S. degree from National Taiwan University in 1981, and the Ph.D. degree from the University of California, Berkeley, in 1987. Since 1987, he joined National Taiwan University, and was awarded Lifetime Distinguished Professorship and Irving T. Ho Chair-professorship in 2007. He has also served as the university Secretary General from 2005 to 2008. His areas of research interest include Robotics, Visual Detection and Tracking, and Control Theory & Applications.

Dr. Fu has been extremely active and highly regarded in his technical field. He has served as the Program Chair of 「2004 IEEE Conference on Control Applications (CCA)」. In terms of the editorial work, he has served as Associate Editor of the prestigious control journal, called Automatica from 1996 to 1999. Starting from 1999, he started a new international control journal, called Asian Journal of Control, and became an Editor-in-Chief of the journal till now. Due to his profound academic reputation, he was appointed as Vice-President for Publication of Asian Control Association (ACA) since 2006, and then was elected as President of ACA during 2012–2013. Due to his active role in international control community, he was elected as BoG member of IEEE Control Systems Society (CSS) from 2014 to 2016.

Dr. Fu has received numerous recognitions for his outstanding performance in research and education during his almost 30 year technical career. Domestically, he has received multiple Distinguished Research Awards from Ministry of Science & Technology (MOST) before 2000, Outstanding Youth Medal in 1991, Ten Outstanding Young Persons Award in 1999, Outstanding Control Engineering Award from Chinese Automatic Control Society (CACS) in 2000, Industry-Academia Collaboration Award from Ministry of Education (MOE) in 2004, TECO Technology Award in 2005, Outstanding Research Award from Pan Wen Yuan Foundation in 2012, and Academic Award from MOE in 2015. Internationally, he was awarded IEEE Fellow in 2004, has been elected as a Distinguished Lecturer for IEEE Control Systems Society from 2013~2015, was awarded 「Wook Hyun Kwon Education Prize」 from Asian Control Association in 2015, and was elevated to IFAC Fellow in 2016.

Keum-Shik Hong is a professor in the School of Mechanical Engineering, Pusan National University (PNU), Busan, Korea. He pursues the concept of adaptive feedback control of human brain, in which fMRI, EEG, fNIRS are considered as sensors and rTMS and tDCS are considered as actuators. His particular specialty is fNIRS sensing. Dr. Hong received his B.S. from Seoul National University in 1979, his M.S. from Columbia University, New York, in 1987, and both an M.S. degree in Applied Mathematics and a Ph.D. in Mechanical Engineering from the University of Illinois at Urbana-Champaign in 1991. In 2009, under the auspices of the World Class University Program of the Ministry of Education, Science and Technology of Korea, he established the Department of Cogno-Mechatronics Engineering, PNU. Dr. Hong has served as Editor-in-Chief of the Journal of Mechanical Science and Technology (2008-2011) and as Associate Editor of Automatica (2000-2006). He currently serves as Associate Editors for Brain-Computer Interfaces and the Frontiers of Neuro-robotics. He was a past President of ICROS, and is currently a Vice President of Asian Control Association. His other research interests include brain-computer interface, nonlinear systems theory, adaptive control, distributed parameter systems, autonomous systems, and innovative control applications in brain engineering.

Jay Katupitiya is an Associate Professor of Mechatronics at The University of New South Wales (UNSW-Australia) in Sydney, Australia. He is currently the deputy head of the School of Mechanical and Manufacturing Engineering and is also the Head of the Mechatronics Engineering undergraduate program at UNSW Australia. He received his PhD from the Catholic University of Leuven, Belgium, specializing in robotics. His current area of research interests are in the development of large vehicle guidance methodologies for wheeled and tracked vehicles, in particular for agricultural machinery. In addition, he also develops control paradigms for vectored thrust aerial vehicles, mostly using adapted and improved versions of sliding mode controllers, model predictive algorithms and optimization methods such as sequential quadratic programming. He will share his experiences in developing autonomous agricultural machines with the conference audience.

T. H. Lee received the B.A. degree with First Class Honours in the Engineering Tripos from Cambridge University, England, in 1980; the M.Engrg. degree from NUS in 1985; and the Ph.D. degree from Yale University in 1987. He is a Professor in the Department of Electrical and Computer Engineering at the National University of Singapore (NUS); and also a Professor in the NUS Graduate School, NUS NGS. He was a Past Vice-President (Research) of NUS. Dr. Lee's research interests are in the areas of adaptive systems, knowledge-based control, intelligent mechatronics and computational intelligence. He currently holds Associate Editor appointments in the IEEE Transactions in Systems, Man and Cybernetics; Control Engineering Practice (an IFAC journal); and the International Journal of Systems Science (Taylor and Francis, London). In addition, he is the Deputy Editor-in-Chief of IFAC Mechatronics journal.

Dr. Lee was a recipient of the Cambridge University Charles Baker Prize in Engineering; the 2004 ASCC (Melbourne) Best Industrial Control Application Paper Prize; the 2009 IEEE ICMA Best Paper in Automation Prize; and the 2009 ASCC Best Application Paper Prize. He has also co-authored five research monographs (books), and holds four patents (two of which are in the technology area of adaptive systems, and the other two are in the area of intelligent mechatronics).

Dr. Lee was an Invited Panelist at the World Automation Congress, WAC2000 Maui U.S.A.; an Invited Keynote Speaker for IEEE International Symposium on Intelligent Control, IEEE ISIC 2003 Houston U.S.A.; an Invited Keynote Speaker for LSMS 2007, Shanghai China; an Invited Expert Panelist for IEEE AIM2009; an Invited Plenary Speaker for IASTED RTA 2009, Beijing China; an Invited Keynote Speaker for LSMS 2010, Shanghai China; an Invited Keynote Speaker for IASTED CA 2010, Banff Canada; an Invited Keynote Speaker for IFTOMM ICDMA 2010, Changsha China; an Invited Keynote Speaker for ICUAS 2011, Denver USA; an Invited Keynote for IEEE CISRAM 2011 Qingdao; an Invited Keynote for IASTED EAS 2012 Colombo; and also an Invited Keynote for IEEE ICCSE 2014 Vancouver.

Yoshito Ota received a Bachelor of Engineering Degree, a Master of Engineering Degree, and a Doctor of Engineering Degree in Electronic Engineering in 1980, 1982, and 1986 respectively, all from Osaka University, Suita, Japan. In 1983, he joined the Department of Electronic Engineering, Osaka University as a Research Associate. In 1991, he became a Lecturer at the Department of Computer-Controlled Machinery, Osaka University, and in 1999 he became a Professor at the Department of Computer-Controlled Mechanical Systems, Osaka University. In 2006, he joined the Department of Applied Mathematics and Physics, Kyoto University, where he is currently a Professor. From 1986 to 1988, he was a Visiting Scientist at the Laboratory for Information and Decision Systems, Massachusetts Institute of Technology, USA.

His research interest is in the area of robust control, networked control, and system identification. He received the SICE paper awards several times including 1992 Tomoda Prize and 2014 Takeda Prize from the Society for Instrument and Control Engineers in Japan.

Dr. Ohta was a member of Program Committee for the 34th and 35th IEEE Conferences on Decision and Control in 1995 and 1996. From 2000 to 2001, he was a member of Conference Editorial Board, IEEE Control Systems Society. He served as an Associate Editor of the IEEE Transactions on Automatic Control from 2001 to 2005. He was the Vice-Chair for Invited Sessions for the 42nd IEEE Conference on Decision and Control in 2003. He served as an External Liaison Representative to SICE from 2006 to 2008, and a member of Board of Governors, IEEE Control Systems Society, from 2008 to 2010. He was the General Chair for the 54th IEEE Conference on Decision and Control in 2015. He was an Associate Editor of Automatica from 2006 to 2015, and has been the Editor-in-Chief of SICE Journal of Control, Measurement, and System Integration since 2015. Currently he is a Vice President of SICE.

Kai-Tai Song is a professor of Department of Electrical and Computer Engineering and Institute of Electrical Control Engineering at National Chiao Tung University, Taiwan. He received his Ph.D. degree from Katholieke Universiteit Leuven, Belgium in 1989. He served as the Director of Institute of Electrical Control Engineering and the Associate Dean of Academic Affairs and the Associate Dean of the Office of Research & Development at NCTU. He is currently the President of Chinese Automatic Control Society (CACS) at Taiwan and VP of Asian Control Association (ACA). He served as the chairman of the Society of IEEE Robotics and Automation, Taipei Chapter in 1999 and the Program Chair of the 8th Asian Control Conference (ASCC 2011). He received the best paper award of IEEE ICSSE 2016, IEEE ICAL 2012 and best paper award of CACS International Automatic Control Conference in 2013 and 2014. He coached the NCTU Robotics team, which won the first place of University Challenge at World Robot Olympiad Qatar2015. His current research interests include mobile robots, image processing, visual tracking and mobile manipulation.

Tsu-Chin Tsao is a Professor at the Mechanical and Aerospace Engineering Department, Henry Samuelli School of Engineering and Applied Science, University of California Los Angeles. He received B.S. in engineering from National Taiwan University, Taipei, Taiwan, and M.S. and Ph.D. in mechanical engineering from University of California, Berkeley. Recognitions of his research accomplishments include ASME Journal of Dynamic Systems, Measurement, and Control Best Paper Award, ASME Dynamic Systems and Control Division Outstanding Young Investigator Award, American Automatic Control Council Hugo S. Shuck Best Paper Award, International Symposium on Flexible Automation Best Paper Award, and International Federation of Automatic Control (IFAC) Mechatronic Systems Award.

CACS 2016 PROGRAM AT A GLANCE

Time	Nov. 9 (WED)	Nov.10 (THU)	Nov.11 (FRI)
0845-10:15	Oral Session	Oral Session	Oral Session
10:15-10:40	Tea Break		
10:40-12:10	Oral Session	Oral Session	Oral Session
12:45-1:30	Young Professionals Workshop	Lunch Time	
13:30-14:00	Opening Ceremony	Plenary Speech (IV) (13:30-14:30)	
14:00-15:00	Plenary Speech (I)		
15:00-15:20	Tea Break	Tea Break (14:30-14:50)	
15:20-16:20	Plenary Speech (II)	Plenary Panel Discussion (14:50-16:50)	
16:20-17:20	Plenary Speech (III)		
17:20-18:20	Welcome reception	Banquet(18:30-21:00)	

📅 9 November 09, 2016 (Wednesday)

Time	November 09 (WED)			
	Oral Session (I)			
	WE101	WE102	WE103	WE104
08:45-10:15	Best Student Paper Competition [Han Kou Room (B2)]	Humanoid Robot [Laurel Salon II (B2)]	Brain wave controlled exercise rehabilitation system with bio-feedback [Shanghai Room (16F)]	Advanced robot applications and technologies [New York Room (16F)]
10:15-10:40	Tea Break			
	Oral Session (II)			
	WE201	WE202	WE203	WE204
10:40-12:10	Best Paper Competition [Han Kou Room (B2)]	Autonomous Robot Navigation and Control Systems [Laurel Salon II (B2)]	Developments of intelligent cluster machine and wearable devices for POWER rehabilitation and their clinical testing and assessment [Shanghai Room (16F)]	Related Design and Implementation for Some Robots [New York Room (16F)]
12:45-13:30	Young Professionals Workshop: how to become an outstanding researcher [Han Kou Room (B2)]			
13:30-14:00	Opening Ceremony [Evergreen Salon I (B2)]			
14:00-15:00	Evergreen Salon I (B2) Plenary Speech (I) *Distributed Human / Social Inspired Computation Systems Based on Information and Knowledge Sharing* **Prof. Janusz Kacprzyk** Fellow of IEEE and IFSA, Professor of Systems Research Institute, Polish Academy of Sciences, Warsaw, Poland			
15:00-15:20	Tea Break			
15:20-16:20	Evergreen Salon I (B2) Plenary Speech (II) *Neurodynamics-based Optimization Processing in the Big Data Era* **Prof. Jun Wang** Fellow of IEEE and IAPR, Chair Professor of Computer Science Department, City University of Hong Kong, China			
16:20-17:20	Evergreen Salon I (B2) Plenary Speech (III) *The Practical Aspects of Fault Detection, Fault Isolation and System Reconfiguration* **Prof. Paul P. Lin** Fellow of ASME, Associate Dean of Engineering College, Cleveland State University, USA			
17:20-18:20	Welcome reception [Evergreen Salon I (B2)]			

📅 **November 10, 2016 (Thursday)**

Time	November 10 (THU)				
	Oral Session(III)				
	TH101	TH102	TH103	TH104	TH105
08:45-10:15	Intelligent systems for active aging healthcare [Han Kou Room (B2)]	Applications of machine vision and motion control [Laurel Salon II (B2)]	Control System Design and Applications (I) [Chevalier Teppanyaki (2F)]	Intelligent computing [Shanghai Room (16F)]	Correlation and Tendency Analysis and Operator Design for Symbolic Data in Weather Data [New York Room (16F)]
10:15-10:40	Tea Break				
	Oral Session(IV)				
	TH201	TH202	TH203	TH204	TH205
10:40-12:10	Mechanism Design and Control of Walking Assistive Exoskeleton [Han Kou Room (B2)]	Integration of Robotic Techniques [Laurel Salon II (B2)]	Expert System and intelligent control [Chevalier Teppanyaki (2F)]	Development of Intelligent Monitoring Platform and Drive-by-Wire Control Scheme [Shanghai Room (16F)]	Multiple Service Robotic Systems [New York Room (16F)]
13:30-14:30	Evergreen Salon I (B2)				
	Plenary Speech (IV) *Developments in Intelligent Systems for Autonomous & Automated Engineering Systems* **Prof. Tong Heng Lee** Professor of Electrical and Computer Engineering Department, National University of Singapore (NUS), Singapore				
14:30-14:50	Tea Break				
14:50-16:50	Evergreen Salon I (B2)				
	Plenary Panel Discussion **Trend in Intelligent Systems, Robotics and Internet of Control** Chair: Prof. Kai-Tai Song, National Chiao Tung University, President of CACS Panelists: Prof. Li-Chen Fu, National Taiwan University, IEEE Fellow & IFAC Fellow Prof. T. H. Lee, National University of Singapore, President of ACA Prof. Yoshito Ohta, Kyoto University, Vice President of SICE Prof. Tsu-Chin Tsao, University of California Los Angeles, Fellow of ASME Prof. Keum-Shik Hong, Pusan National University, Vice President of ACA Prof. Jay Katupitiya, University of New South Wales				
18:30-21:00	Banquet [Evergreen Salon II (B2)]				

📅 **November 11, 2016 (Friday)**

Time	November 11 (FRI)		
	Oral Session(V)		
	FR101	FR102	FR103
08:45-10:15	System Design for Robot Manipulator [Laurel Salon I (B2)]	Development of Intelligent Endoscope Robot [Laurel Salon II (B2)]	Control System Design and Applications (II) [Han Kou Room (B2)]
10:15-10:40	Tea Break		
	Oral Session(VI)		
	FR201	FR202	FR203
10:40-12:10	Advanced Control for Mechatronics Systems [Laurel Salon I (B2)]	Development of fire assistant robots [Laurel Salon II (B2)]	Systems Simulation and Control [Han Kou Room (B2)]

CACS 2016 PROGRAM SCHEDULE

■ Session Name: Best Student Paper Competition

Room：Han Kou Room (B2)
Time：08:45 -10:15 Nov. 09, 2016

Session Chair:
Prof. Chun-Liang Lin

WE101

Paper ID	Paper Title	Author(s)	Page No
#1046	Precision Sinusoidal Tracking for Galvanometer Scanner with Smith Predictor-based Adaptive Sliding Mode Control	Wei-Chih Liu, Da-wei Liu, Jim-Wei Wu, Kuang-Yao Chang, Meng-Hao Chou, Li-Chen Fu	1
#1048	Engine Controller System of Hybrid Powered Multi-Rotor System	Chin E. Lin, Kai-Ti Jhuang, Thanakorn Supsukbaworn	2
#1060	Data-Driven Tuning of State Feedback Gains with Stability Constraint Using Experimental Data	Shogo Aoki, Kazuhiro Yubai, Daisuke Yashiro, Satoshi Komada	3
#1081	An Embedded Non-Contact Body Temperature Measurement System with Automatic Face Tracking and Neural Network Regression	Po Wei Huang, Tzu Hsuan Chang, Meng Ju Lee , Tzu-Min Lin, Meng Liang Chung, Bing-Fei Wu	4
#1094	Robust M-estimation Filter for MEMS Gyro Array Processing	Kuan-Ying Huang, Jyh-Ching Juang, Tom Lin, Ming-Yu Hsieh,	5
#1107	Hybrid EEG-NIRS based active command generation for quadcopter navigational control	Muhammad Jawad Khan, Amad Zafar, Keum-Shik Hong	6

■Session Name: Humanoid Robot

Room：Laurel Salon II (B2)
Time：08:45 -10:15 Nov. 09, 2016

Session Chair:
Prof. Kao-Shing Hwang
Prof. Chung-Hsien Kuo

WE102

Paper ID	Paper Title	Author(s)	Page No
#1139	Improving Walking Stability of a Teen-size Humanoid Robot with IMU Feedbacks	Chen-Yun Kuo, I Wayan Dani Pranata, Chung-Hsien Kuo	7
#1164	Posture Imitation and Balance Learning for Humanoid Robots	Kao-Shing Hwang, Wei-Cheng Jiang	8
#1166	An Extended Linear Inverted Pendulum Model for Teen-Sized Humanoid Robot	Guan-Yu Chen, Wei-Chung Chen Chen, Tzuu-Hseng S. Li	9
#1099	Integral Terminal Sliding-Mode Control for a Permanent Magnet Linear Synchronous Motor	Syuan-Yi Chen, Guan-Wei Wu, Tung-Hung Li	10
#1039	An Improved Inverse Kinematics Solution of 6R-DOF Robot Manipulators with Euclidean Wrist Using Dual Quaternions	Leoro Josuet Bernardo, Betancourt Carlos Andres, Lin Hsien-I, Hsiao Te-Sheng, Wang Chun Sheng	11
#1031	Multivariable Controller Tuning Based on Sensitivity Shaping Using Input/Output Data	Keita Takewaka, Kazuhiro Yubai, Daisuke Yashiro, Satoshi Komada,	12

■Session Name: Brain Wave Controlled Exercise Rehabilitation System with Bio-feedback

	Room：Shanghai Room (16F) Time：08:45-10:15 Nov. 09, 2016		Session Chair: Prof. Kuo-Kai Shyu Prof. Pi-Cheng Tung	WE103
Paper ID	Paper Title		Author(s)	Page No
#1012	Brain wave controlled exercise rehabilitation system with bio-feedback: Assistive mechanism design and accomplishment		Pi-Cheng Tung, You-Yu Chang, Yi-Jun Liao, Hui-Shan Lin, Yu-Kai Chen	**13**
#1042	Analysis of Electroencephalography alteration during sustained cycling exercise using power spectrum and fractal dimension		Szu Yu Lin, Chii Wen Jao, Po Shan Wang, Yu-Te Wu	**14**
#1076	Brain Wave Controlled Exercise Rehabilitation System with Biosignals Feedback: Circuit System Design		Kuo-Kai Shyu, Po-Lei Lee , Chung-Ying Ho, zu-Hang Huang	**15**
#1030	A Direct Tuning of Disturbance Observer from Experimental Data Evaluating Noise Rejection		Naoya Iwamoto, Kazuhiro Yubai, Daisuke Yashiro, Satoshi Komada	**16**
#1132	Detection and Correction of Speech Polarity using Hilbert Phase Information and Implementation of Speech Recognition Robot Based on eBox Interfacing		Deepak Balram, Kuang-Yow Lian	**17**
#1133	Detection Method of Meat Containing Excessive Moisture Based on Hyperspectral Imaging and SVM Multi-Information Fusion		Peiyuan Guo, Hngbing Xao, Sxia Xng, Mi Sun, Man Bao	**18**

■Session Name: Advanced Robot Applications and Technologies

	Room：New York Room (16F) Time：08:45 -10:15 Nov. 09, 2016		Session Chair: Prof. Hsien-I Lin Prof. Jin-Siang Shaw	WE104
Paper ID	Paper Title		Author(s)	Page No
#1054	A Motion-responsive Treadmill for Stroke Patients in Neural-development Treatment		Ruei-Fa Tseng, Wen-Shan Yang, Pei-Chun Lin	**19**
#1056	Cooperative Manipulation on a Dual-Arm Robot Using Kalman Filter Estimation		Wu-Te Yang, Bo-Hsun Chen, Pei-Chun Lin	**20**
#1067	Automatic Following in a Sheet Metal Bending Process		Hsien-I Lin, Diego Hidalgo Carvajal	**21**
#1079	Robot Control for Assembly Under Industry 4.0 Architecture		Jinsiang Shaw, Kai Yuan Cheng	**21**
#1162	Automatic Identification and Data Capture for Building Decision Model in Campus		Chun-Yen Chung, Chun-Min Hung, I-Ting Peng	**22**

■Session Name: Best Paper Competition

	Room：Han Kou Room (B2) Time：10:40 -12:10 Nov. 09, 2016		Session Chair: Prof. Chun-Liang Lin	WE201

Paper ID	Paper Title	Author(s)	Page No
#1041	Analysis and Compensation of Cogging Effect in Permanent Magnet Synchronous Motors	Rui Wen Chen, Yusie Rizal, Ming-Tzu Ho	23
#1051	Design of State-Feedback Quadratic Regulator for Polynomial Systems Using Sum-of-Squares Approach	Tanagorn Jennawasin, David Banjerdpongchai	24
#1120	Intelligent Shopping Assistant System	Bing-Fei Wu, Shih Jhe Yao, Li Wei Hou, Po Ju Chang, Wan Ju Tseng, Ching-Wei Huang, Yung Shin Chen, Po-Yu Yang	25
#1072	A Novel Localization Approach Towards Anchor to Node in Wireless Sensor Networks	Meng Joo Er, Shi Zhang, Baihai Zhang, Chiang-Ju Chien Feifan Wang	26
#1073	Passive Manuvering Target Tracking via Hybrid Coordinates Federated Filtering Fusion with Information Feedback	Li-Wei Fong, Zheng-Kai Chen	27
#1127	Design and Implementation of Networked Control System for Mobile Service Robots Using Polynomial Fuzzy Systems	Gwo-Ruey Yu, Chih-Heng Chang, Yu-Chia Huang	28

■Session Name: Autonomous Robot Navigation and Control Systems

	Room：Laurel Salon II (B2) Time：10:40 -12:10 Nov. 09, 2016		Session Chair: Prof. Wei-Yen Wang Prof. Chen-Chien Hsu	WE202

Paper ID	Paper Title	Author(s)	Page No
#1086	An Advanced Mobile Robot Control System Based on Vector Model	Bing-Gang Jhong, Mei-Yung Chen	29
#1089	Hybrid Path Planning of Mobile Robots Using Multi-Skeleton and A* Algorithms	Yen-Cheng Kung, Yi-Hsing Chien, Chen Chien Hsu, Wei-Yen Wang	29
#1090	FPGA-based Implementation for SIFT of Image Recognition Algorithm	Wei-Zheng Pan, Chen Chien Hsu, Wei-Yen Wang, Shih An Li	30
#1091	Design of an Autonomous Tracked Robot for Detecting Stairs and Moving on Stairs in Outdoor Environments	Chin-Wei Hu, I-Hsum LI, Yi-Hsing Chien, Wei-Yen Wang, Chen Chien Hsu	31
#1009	Comparison of Odometry Techniques for Vehicle Navigation	Shang Lin Yu, Da-Wun Tsou, Jyh-Ching Juang	32

■**Session Name: Developments of Intelligent Cluster Machine and Wearable Devices for POWER Rehabilitation and Their Clinical Testing and Assessment**

	Room：Shanghai Room (16F) Time：10:40 -12:10 Nov. 09, 2016		Session Chair: Prof. Chung-Hsien Kuo Prof. Yi-Hung Liu	WE203
Paper ID	**Paper Title**		**Author(s)**	**Page No**
#1095	Integration of GPS and Radio Frequency Communication for Wounded Military Personnel Localization Tracking		Ke-Feng Lin, Chung-Hsien Ku, Chin-Liang Lin, Ping-Nan Chen	**33**
#1131	Breath detection for enhancing quality of X-ray image		Quoc Viet, Shun-Feng Su, Ming-Chang Chen	**34**
#1136	Mechatronics Design of a Cluster POWER Rehabilitation System		Kei-Lung Chen, Yu-Cheng Kuo, Chun-Ju Wu, Chung-Hsien Kuo	**35**
#1161	Evaluation of Therapeutic Effect of POWER Rehabilitation for the Elderly with Frailty Syndrome		Lee Si-Huei, Chen-Hsin Lu, Chi-Chun Kao	**36**
#1163	EEG Brain-Computer Interface-based Mental Prosthesis Applied to Patients with Amyotrophic Lateral Sclerosis		Shiuan Huang, Jun-Ming Liu, Yi-De Huang, Yi-Hung Liu	**37**
#1126	SOS-based Robust Control of a Bidirectional Converter with Time-Delay		Chun-Huan Wang, Gwo-Ruey Yu, Ya-Hsuan Chiang	**38**

■**Session Name: Related Design and Implementation for Some Robots**

	Room：New York Room (16F) Time：10:40 -12:10 Nov. 09, 2016		Session Chair: Prof. Wen-June Wang Prof. Ming-Yang Cheng	WE204
Paper ID	**Paper Title**		**Author(s)**	**Page No**
#1062	The design and implementation of a biomimetic flapping-wing robot(III)		Chih-Hui Chiu, Teng-I Wang, Ci-Yuang Wu, Yao-Ting Hung, Jie-Min Lin, Yu-Siou Huang	**39**
#1116	The Monitoring Functions in Hexapod and Jumping Robots		Wen-June Wang, Hao-Gong Chou, Sheng-Wei Mei, Yu-Hsuan Shen	**40**
#1140	Simple Image Recognition for Walking Robots		J.T. Lin, Chin-Wang Tao, C.W. Chang	**41**
#1155	Design and Production of Amphibious Biomimetic Animal Robot		Rong-Jyue Wang, Cheng Hao Hu, Yan-Cheng Ding, You-Jia Mai	**41**
#1034	An Eco-Cruising Control Systems Using Nonlinear Predictive Control Approach		Yu-Chen Lin, Hsiang-Chieh Hsu, I-Chun Kuo	**42**
#1037	Vision-Based Robotic System for Polyhedral Object Grasping using Kinect Sensor		Pablo Gonzalez, Ming-Yang Cheng, Wei-Liang Kuo	**43**

■Session Name: Intelligent Systems for Active Aging Healthcare

	Room：Han Kou Room (B2) Time: 08:45 -10:15 Nov. 10, 2016		Session Chair: Prof. Yo-Ping Huang Prof. Chun-Fei Hsu	TH101
Paper ID	Paper Title		Author(s)	Page No
#1014	Vision-based Autonomous Wheelchair Design for Elderly Population		Tsu-Tian Lee Ching-Chang Wong Hsiang-Min Chan, Ke-Han Yu, Cheng-En Tsai, Chia-Hung Lin	**44**
#1015	Development of Outdoor Navigation with Situation Awareness on an Intelligent Wheelchair Platform		Tsu-Tian Lee, Hsin-Han Chiang, Yen-Sung Chen, Wan-Ting You	**45**
#1016	Analysis of Hand Tremor from Using Smart Assistive Stick		Yo-Ping Huang, Chih-Hang Chuang	**46**
#1017	Control of a Dynamically Stable Spherical Mobile Robot		Chien-Ting Su, Bo-Rui Chen, Bore-Kuen Lee, Chun-Fei Hsu	**47**
#1018	Tracking Control for Two-wheeled Electronic Canes		Jenq-Lang Wu, Wei-Yueh Ku, Hua-Yen Chiu	**48**
#1019	Research on Noise Cancellation Stereo System for Serious Sleep		Cheng-Yuan Chang	**48**

■Session Name: Applications of Machine Vision and Motion Control

	Room：Laurel Salon II (B2) Time: 08:45 -10:15 Nov. 10, 2016		Session Chair: Prof. Chin-Sheng Chen Prof. Sendren Sheng-Dong Xu	TH102
Paper ID	Paper Title		Author(s)	Page No
#1032	Modelling Human Behaviour in Smart Home Energy Management Systems via Machine Learning Techniques		Devanshi Gariba, Bhautik Pipaliya	**49**
#1033	6-DoF Camera Motion Estimation Algorithm Using RGB-D Cameras		Chi-Yi Tsai, Chia-Hsien Lu, Chih-Hung Huang	**50**
#1049	Synchronization of Novel Fuzzy-Model-based Systems		Shih-Yu Li, Shun-Hung Tsai, Chin-Sheng Chen	**51**
#1052	3D Reconstruction from Camera Rotation		Yu-Yuan Tsou, Huei-Yung Lin, Guo-Sheng Cai	**52**
#1071	Optimal Motion Planning and VR Simulation Design for Sheet Metal Bending Processes Using a Redundant Robot		Chih-Jer Lin, Chin-Sheng Chen, Jian-Hong Hou	**53**
#1125	Robot Vision Based on Kinect		Shang-Hsin Liu, Sendren Sheng-Dong Xu, Chin-Sheng Chen	**54**

■Session Name: Control System Design and Applications (I)

Room：Chevalier Teppanyaki (2F) Time: 08:45 -10:15 Nov. 10, 2016	Session Chair: Prof. Chia-Feng Juang Prof. Chun-Liang Lin	TH103

Paper ID	Paper Title	Author(s)	Page No
#1047	Navigation of A Mobile Robot in Unknown Environments Using Fuzzy Controller with Multiobjective Ant Colony Optimization	Trong Bac Bui, Chia-Feng Juang	**55**
#1102	A New Design of Adaptive Terminal Iterative Learning Control for Nonlinear Systems	Chiang-Ju Chien, Ying-Chung Wang, Meng Joo Er, Dong Shen, Ronghu Chi	**56**
#1119	An optical approach to counting reeled components	Chun Lin Tseng, Hao Yu Lu, Shun Pin Hsu	**57**
#1124	Advanced Driving/Braking Control Design for Electric Bikes	Chia-Hong Tu, Chun-Liang Lin, En-Ping Chen, Yu-Chan Chen, Chi-An Chen	**58**
#1068	Distributed Formation Control of a Robot Swarm Using a Reaction-Diffusion System	Yusuke Makihata, Hisatoshi Katsumata, Naoyuki Hara, Keiji Konishi	**59**
#1069	A Case Study on PI Gain Tuning by FRIT Method for a Floating Offshore Wind Turbine Scale Model	Koki Kakita, Naoyuki Hara, Yasunori Nihei, Keiji Konishi	**60**

■ Session Name: Intelligent Computing

Room：Shanghai Room (16F) Time：08:45 -10:15 Nov. 10, 2016	Session Chair: Prof. Shun-Yuan Wang Prof. Jen-Hsiang Chou	TH104

Paper ID	Paper Title	Author(s)	Page No
#1106	A Localization Method Using the Bee Colony Algorithm for Mobile Wireless Sensor Networks	Chwan-Lu Tseng, Che-Shen Cheng, Chih-Wei Chen, Shun Yuan Wang, Ren-Jie Wen	**61**
#1108	Design of a Fuzzy Sliding-Mode Controller for Induction Motor Vector Control Systems	Shun Yuan Wang, Chuan-Min Lin, Chwan-Lu Tseng, Jen-Hsiang Chou, Bo-Lun Syu	**62**
#1121	Effects of Pulse Transit Time and Physiological Differences on Wearable Device based Blood Pressure Estimation	Chun-Chieh Hsiao, Hui-Chia Kuo, Ren Guey Lee, Robert Lin	**63**
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#1103	Trend Classification Based Weather Forecast	Yang-Chung Chang, Shun-Feng Su, Ming-Chang Chen	**69**
#1129	Feature Selection of Weather Data with Normal-Distribution-Valued Principal Component Analysis	Zhi-Qian Wang, Jin-Tsong Jeng, Sheng-Chieh Chang, Chen-Chia Chuang	**70**
#1138	The Feature Selection with Multi-Granulation for Symbolic Interval-Value Data	Chih-Ching Hsiao, Yi-Zhen Chen, Chen-Chia Chuang, Jin-Tsong Jeng	**71**
#1078	Orbit Transfer from Earth to Mars Using Modified Lambert Algorithm	Chieh-Min Liu, Jyh-Ching Juang,	**72**
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#1050	Assistive Torque Generation for a Lower Limb Exoskeleton Using a Predictive Artificial Neural Network	Susanto Susanto, Riska Analia, Kai-Tai Song	**76**
#1066	Robot Trajectory Learning By Shared Control	Kai-Tai Song, Hung-Shen Liu	**76**
#1035	Flight Control of a Tilt-Rotor Quadcopter via Sliding Mode	Chih-Chen Yih,	**77**
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#1170	Kinect based Autonomous Guiding Wheelchair Robot		Pei-Chung Chen, Ping-Han Huang, Sih-Yue Yang, Ming-Yuan Shieh	**81**
#1172	The Prior Study of Fistula Examination by Robotic Ultrasound System		Yi Chun Du, Chung Yi Chiu, Cheng Bang Shih, Ming Jui Wu	**82**
#1058	Design of Supervisory Cascade Model Predictive Control for Industrial Boilers		Pongsorn Keadtipod, David Banjerdpongchai	**83**
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#1158	Stator Field Orientation Controlled Induction Motor Drive Based on Genetic Algorithm Speed Controller		Yung-Chang Luo, Ci-Guang Chen, Ying-Piao Kuo, Cheng-Tao Tsai	**86**
#1159	To Achieve Maneuverable Wireless Disaster Relief Robots Combining With Raspberry Pi Based on Development of CrossSystem Platform Android		Neng-Sheng Pai, Yu Chun Lin, Pi-Yun Chen, Yi-Pin Kuo	**87**
#1160	IOT Based Intelligent Indoor Unmanned Carrier System		Wen-Cheng Pu, Hung Che Chiung, Jyu Jheng Yang	**88**
#1008	Low-Cost Face Recognition System Based on Extended Local Binary Pattern		Yon-Ping Chen, Qi-Hui Chen, Kuan-Yu Chou, Ren-Hau Wu	**89**
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#1053	High-Utilization Current-Sharing Controller for Battery-Ultracapacitor Hybrid System	Lan-Rong Dung, Zhe-Yi Lin		**91**
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#1082	Automated Guidance Control of Golf-Cart	Der-Cherng Liaw, Li-Feng Tsai, Chin-Wen Tung		**92**
#1084	Development of an IOT-Platform	Der-Cherng Liaw, Chien-Chih Kuo, Hsiao-Jen Hsieh, Shung-Wei Huang, Chin-Wen Tung		**92**
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#1087	A Study in Human-Machine Interaction through Agent Simulation: an Application in Pedestrian Crossing	Chih-Chun Wang, Alan Liu, Power Wu, Po-Hsuan Lu		**94**
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#1141	Vision-Based 3D Pose Estimation for Random Bin Picking	Shih-Cheng Liang, Huei-Yung Lin, Yu-Kai Chen		**97**

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#1110	Intuitive Teaching System Design for Six-axis Robot Manipulator		Ching-Chang Wong, Siang-Lin You, Chia-Jun Yu	**99**
#1115	ROS-based Software Structure, Strategy System and Simulation Platform for Robot Manipulator		Hsuan-Ming Feng, Kung-Han Chen, Jian-Ming Lin, Shih-An Li, Ching-Chang Wong	**99**
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#1063	Visual Tracking by Adaptive Fusion of Color Camera and Thermal Camera		Jung-Ting Hsu, Bo-Wei Jiang, Cheng-Ming Huang	**105**
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#1118	Robust Control of Euler-Lagrange Mechanical Systems with Decentralized Adaptive Scheme	Cheng-Fa Cheng, Tse-Han Chen	**109**
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