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Welcome Message from Chairs

Dear ICPADS 2011 Attendees:

Welcome to the 17th IEEE International Conference on Parallel and Distributed Systems, ICPADS 2011. Established in 1992, ICPADS has been a major international event in the area of parallel and distributed systems. This conference provides an international forum for scientists, engineers, and users to exchange and share their experiences, new ideas, and latest research results in all aspects of parallel and distributed systems.

The 17th ICPADS conference, held from December 7 to 9, 2011, is organized by National Cheng Kung University, Tainan, Taiwan and many volunteers across the world. The conference covers current interests in distributed and parallel computing and consists of eight tracks, each handled by two Program Vice Chairs. We have received 352 submissions from 32 countries. Each manuscript was reviewed by at least three reviewers. We are very thankful to hundreds of Technical Program Committee Members who helped with the review process. The final conference program consists of 94 carefully selected papers.

The conference program includes three outstanding keynote talks, sixteen technical sessions, and one panel discussion. Seven workshops are held in conjunction with ICPADS 2011. We would like to thank Members of the Organizing Committee, Program Vice Chairs, Program Committee Members, reviewers, Workshop Chairs, workshop organizers, workshop Program Committee Members, Publication Chair, Local Arrangement Chair, Financial Co-Chairs and Steering Committee Chair for their contributions.

We would also like to take this opportunity to thank our sponsors for their strong supports to this event: National Cheng Kung University, National Science Council, Ministry of Education, Academia Sinica, National Center for High Performance Computing, Institute for Information Industry, Industrial Technique Research Institute, Taiwan Association of Cloud Computing, The Computer Society of the Republic of China, Intel Corporation, Tainan City Government and IEEE Computer Society Technical Committee on Parallel Processing.

We hope you enjoy the conference and scientific interactions with participants as well as the traditional atmosphere, beautiful temples and delicious local foods of Tainan city!

Sincerely,

General Co-Chairs

Matt Mutka, Michigan State University

Ce-Kuen Shieh, National Cheng Kung University

Program Co-Chairs

Sheng-Tzong Cheng, National Cheng Kung University

Yunhao Liu, Hong Kong University of Science and Technology

Program Guide

Dec. 7, 2011 (Wednesday)

Room	B1-Room A	B1-Room B	B1-Room C	B1-Room D
08:00-17:00	Registration			
08:50-10:30		W2:N&SS-I	W3:IOT-I	
10:30-10:50	Coffee Break ☕			
10:50-12:30	W1:FICN-2011	W2:N&SS-II	W3:IOT-II	
12:30-13:40	Lunch (10F Cafe) 🍴			
13:40-15:20	W4:DCIA-I	W5:HotPOST-I	W6:P2PNVE-I	W7:PDCRS-I
15:20-15:50	Coffee Break ☕			
15:50-17:30	W4:DCIA-II	W5:HotPOST-II	W6:P2PNVE-II	W7:PDCRS-II
18:30-20:00	Reception (3F Cheng Kung Function Room)			

Dec. 8, 2011 (Thursday)

Room	Grand Ballroom B (B2)			
08:00-17:00	Registration			
09:20-09:30	Opening Ceremony			
09:30-10:30	Keynote Speech 1			
10:30-11:00	Coffee Break ☕			
11:00-12:00	Keynote Speech 2			
12:00-13:00	Lunch (10F Cafe) 🍴			
Room	B1-Room A	B1-Room B	B1-Room C	B1-Room D
13:00-15:00	S1:Cloud-I	S2:Mobile-I	S3:Parallel-I	S4:Multicore-I
15:00-15:30	Coffee Break ☕			

15:30-17:30	S5:Cloud-II	S6:Mobile-II	S7:Parallel-II	S8:Multicore-II
18:30-20:30	Banquet (3F Cheng Kung Function Room)			

Dec. 9, 2011 (Friday)

Room	Grand Ballroom B (B2)			
08:00-15:00	Registration			
09:00-10:00	Keynote Speech 3			
10:00-10:30	Coffee Break ☕			
10:30-12:00	Panel Discussion			
12:00-13:00	Lunch (10F Cafe) 🍴			
Room	B1-Room A	B1-Room B	B1-Room C	B1-Room D
13:00-15:00	S9:Cloud-III	S10:Mobile-III	S11:Security-I	S12:Multicore-III
15:00-15:30	Coffee Break ☕			
15:30-17:30	S13:CPS	S14:Parallel-III	S15:Security-II	S16:P2P

Keynote Speech 1

A New Era for the Convergence of Network Centric and Data Centric Computing

Time: Dec. 8, 2011 09:30-10:30

Room: Grand Ballroom B (B2)



Speaker:

David H.C. Du

Professor

Department of Computer Science and Engineering

University of Minnesota, Minneapolis, USA

Dr. David Du is currently the Qwest Chair Professor of Computer Science and Engineering at University of Minnesota, Minneapolis. He has served as a Program Director (IPA) at National Science Foundation CISE/CNS Division from March 2006 to September 2008. At NSF, he was responsible for NeTS (networking research cluster) NOSS (Networks of Sensor Systems) Program and worked on Cyber Trust Program. He is also the Director of a NSF I/UCRC Center on Intelligent Storage. Dr. Du received a Ph.D. degree from University of Washington (Seattle) in 1981. He joined University of Minnesota as a faculty since 1981.

Dr. Du has a wide range of research expertise including multimedia computing, mass storage systems, high-speed networking, sensor networks, cyber security, high-performance file systems and I/O, database design, and CAD for VLSI circuits. He has authored and co-authored over 230 technical papers including 110 referred journal publications in these research areas. He has graduated 51 Ph.D. and 80 M.S. students in the last 30 years. Dr. Du is an IEEE Fellow (since 1998) and a Fellow of the Minnesota Supercomputer Institute. He is currently serving on the Editorial Boards of several international journals. He has also served as Conference Chair and Program Committee Chair for several major conferences in multimedia, networking, database, parallel/distributed computing and security areas. Currently he is the General Chair of the 30th IEEE Symposium on Security and Privacy (2009) and Program Committee

Co-Chair for the 37th International Conference on Parallel Processing (2009), General Chair of ICDCS (2011). He has had research grants from many federal funding agencies including NSF, DARPA, ONR, and DOE. He has a strong tie with many industrial researchers and has collaborated with a number of companies including IBM, Intel, Cisco, Symantec, Seagate, Sun Microsystems, Honeywell, etc.

Abstract

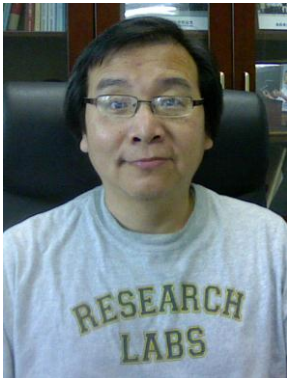
The Internet today has grown to an enormously large scale. Devices large and small are connected globally from anywhere on the earth. Therefore, we can argue that we are in a network centric era. With the rapid advancement of technology, we now also have cheap and small devices with high computing power and large storage capacity. These devices are designed to improve our daily life by monitoring our environment, collecting critical data, and executing special instructions. These devices have gradually become a dominant part of our Internet. Many imaging, audio and video data are converted from analog to digital and digital data are generated at an alarming rate. As a result, unprecedented amount of data are available. How to manage and look for the desired information becomes a great challenge. How to preserve these data becomes a crisis. We can certainly also say that we are in a data centric era. In this talk, we will examine the challenges in the convergence of both network centric and data centric computing. At the same time, many emerging applications like service-oriented, security and real-time demand much better support than the current Internet can offer. In this talk, we will present a vision of content addressable future Internet. What are the essential changes in data representation, information retrieval, storage systems and networking design will be discussed. We believe an object-oriented intelligent storage is an essential part of the solution to this new computing and communication environment. We will also present a number of research projects that are currently under investigation in our NSF I/UCRC Center on Intelligent Storage. These projects include data deduplication, long-term data preservation, data center power management, and flash memory based solid state drives.

Keynote Speech 2

Peregrine: An All-Layer-2 Network in the ITRI Container Computer

Time: Dec. 8, 2011 11:00-12:00

Room: Grand Ballroom B (B2)



Speaker:

Tzi-cker Chiueh

General Director of Cloud Computing Center for Mobile Application,
Industrial Technology Research Institute, Taiwan

Professor of Computer Science Department, Stony Brook University, New
York, USA

Dr. Chiueh is the General Director of Cloud Computing Center for Mobile Application, Industrial Technology Research Institute, and a Professor of Computer Science Department, Stony Brook University, New York.

He received his MS And Ph.D. in Computer Science from Stanford University and University of California at Berkeley, respectively, and served as the director of Core Research in Symantec Research Labs between 2007 and 2009. Dr. Chiueh has published over 200 technical papers in refereed conferences and journals. His current research interests lie in storage systems, data center networking, virtualization and computer security.

Abstract

ITRI container computer is a modular computer designed to be a building block for constructing cloud-scale data centers.

Rather than using a traditional data center network architecture, which is typically based on a combination of Layer 2 switches and Layer 3 routers, ITRI container computer's internal interconnection fabric, called Peregrine, is specially architected to meet the scalability, fast fail-over and multi-tenancy requirements of these data centers. Peregrine is an all-Layer 2 network that is designed to support up to

one million Layer 2 end points, provide quick recovery from any single network link/device failure, and incorporate dynamic load-balancing routing to make the best of all physical network links. In addition, Peregrine features a unique private IP address reuse mechanism that allows virtual machines assigned the same IP address to run on it simultaneously without interfering with one another. Finally, the Peregrine architecture is implementable using only off-the-shelf commodity Ethernet switches.

Keynote Speech 3

Powering Cloud Computing of the Future

Time: Dec. 9, 2011 09:00-10:00

Room: Grand Ballroom B (B2)



Speaker:

Wen-Hann Wang

Vice President of Intel Labs

Director of Circuits Systems Research for Intel Corporation, USA

Dr. Wen-Hann Wang is Vice President of Intel Labs and Director of Circuits and Systems Research for Intel Corporation. He oversees research programs in Circuits, Biosystems, Silicon Photonics, System Architecture, Security, and High Performance Computing. Dr. Wang holds 15 patents and has received numerous technical awards, including the inaugural IEEE/ACM ISCA Influential Paper Award and the SIGMETRICS Award Paper in 1990. Dr. Wang received his Ph.D. in Computer Science from University of Washington. He was a Research Staff Member at IBM T.J. Watson Research Center prior to joining Intel in 1991.

Abstract

Cloud Computing has received enormous attention in industry and academia. This keynote will explore system architectures, programming models, automation mechanisms, and related technologies that enable dramatic efficiency, ubiquity, and productivity improvements in cloud computing. In addition, it will discuss new frameworks for proactive edge and cloud cooperation that can efficiently and effectively exploit "physical world" contents in the cloud.

Panel Discussion

Cloud computing - Obstacles and Opportunities

Time: Dec. 9, 2011 10:30-12:00

Room: Grand Ballroom B (B2)

Chair: Prof. Pangfeng Liu, National Taiwan University, Taiwan

Panelists:

Cho-Li Wang, University of Hong Kong, China

Matt Mutka, Michigan State University, USA

Ping Yeh, Lead, Cloud Computing, Google Taiwan

Ruay-Shiung Chang, National Dong Hwa University, Taiwan

Wen-Hann Wang, Vice President of Intel Labs, USA

It has been two years since the paper "Above the Clouds: A Berkeley View of Cloud Computing" suggested the following ten obstacles and opportunities for cloud computing. We believe that now is a good time to examine these obstacles and opportunities to see which obstacles remain to be the obstacles, and which opportunities have been fully understood after two years of extensive discussion and research.

1. Availability of Service
2. Data Lock-In
3. Data Confidentiality and Auditability
4. Data Transfer Bottlenecks
5. Performance Unpredictability
6. Scalable Storage
7. Bugs in Large-Scale Distributed Systems
8. Scaling Quickly
9. Reputation Fate Sharing
10. Software Licensing Costs

You are more than welcome to share your views on these obstacles, and the opportunities in trying to avoid them in the development of cloud computing.

Main Conference

S1: Cluster, Grid, Cloud Computing and Services – I

Time: Thursday, Dec. 8, 13:00-15:00

Room: B1-Room A

Session Chair: Prof. Da-Wei Chang, National Cheng Kung University, Taiwan

S1-1 Extending Lifetime and Reducing Garbage Collection Overhead of Solid State Disks with Virtual Machine Aware Journaling

Ting-Chang Huang and Da-Wei Chang

S1-2 Scheduling Mixed Real-time and Non-real-time Applications in MapReduce Environment

Xicheng Dong, Ying Wang and Huaming Liao

S1-3 An In-memory Framework for Extended MapReduce

Kim-Thomas Rehmman and Michael Schoettner

S1-4 Physical Machine State Migration

Jui-Hao Chiang, Maohua Lu and Tzi-cker Chiueh

S1-5 Hypervisor Support for Efficient Memory De-duplication

Ying-Shiuan Pan, Jui-Hao Chiang, Han-Lin Li, Po-Jui Tsao, Ming-Fen Lin and Tzi-cker Chiueh

S1-6 A Hierarchical Memory Service Mechanism in Server Consolidation Environment

Liufeng Wang, Huaimin Wang, Lu Cai, Rui Chu, Pengfei Zhang and Lanzheng Liu

S2: Mobile Computing - I

Time: Thursday, Dec. 8, 13:00-15:00

Room: B1-Room B

Session Chair: Dr. Zhonglei Wang, Karlsruhe Institute of Technology, Germany

S2-1 Joint Bandwidth-Aware Relay Placement and Routing in Heterogeneous Wireless Networks

Yuanteng Pei and Matt W. Mutka

S2-2 A Distributed Routing Protocol and Handover Schemes in Hybrid Vehicular Ad Hoc Networks

Jang-Ping Sheu, Chi-Yuan Lo and Wei-Kai Hu

S2-3 A Bandwidth Aggregation Scheme for Member-based Cooperative Networking Over the Hybrid VANET

Chung-Ming Huang, Chia-Ching Yang and Hsiao-Yu Lin

S2-4 A Study of Video Frame Sharing in Sparse Vehicular Networks

Wen-Cheng Shieh, Sok-Ian Sou and Shin-Yeh Tsai

S2-5 Minimizing Ceased Areas with Power Control for Spatial Reuse in IEEE 802.11 Ad Hoc Networks

Han-Chiuan Luo, Eric Hsiao-Kuang Wu and Gen-Huey Chen

S2-6 Efficient VANET Unicast Routing using Historical and Real-Time Traffic Information

Ing-Chau Chang, Yuan-Fen Wang and Cheng-Fu Chou

S3: Parallel Algorithms and Applications – I

Time: Thursday, Dec. 8, 13:00-15:00

Room: B1-Room C

Session Chair: Prof. Ruixuan Li, Huazhong University of Science and Technology, China

S3-1 Sorting Large Multifield Records on a GPU

Shibdas Bandyopadhyay and Sartaj Sahni

S3-2 Strassen's Matrix Multiplication on GPUs

Junjie Li, Sanjay Ranka and Sartaj Sahni

S3-3 Optimization of Sparse Matrix-Vector Multiplication with Variant CSR on GPUs

Xiaowen Feng, Hai Jin, Ran Zheng, Kan Hu, Jingxiang Zeng and Zhiyuan Shao

S3-4 Broadcasting on Large Scale Heterogeneous Platforms with Connectivity Artifacts Under the Bounded Multi-Port Model

Olivier Beaumont, Nicolas Bonichon, Lionel Eyraud-Dubois and Przemysław Uznański

S3-5 Node-to-Node Disjoint Paths in k-ary n-cubes with Faulty Edges

Yonghong Xiang, Iain Stewart and Florent Madelaine

S4: Multicore Computing and Parallel/Distributed Architecture – I

Time: Thursday, Dec. 8, 13:00-15:00

Room: B1-Room D

Session Chair: Prof. Yi-Shin Chen, National Tsing Hua University, Taiwan

S4-1 PQEMU: A Parallel System Emulator Based on QEMU*Jiun-Hung Ding, Po-Chun Chang, Wei-Chung Hsu and Yeh-Ching Chung***S4-2 Set Utilization Based Dynamic Shared Cache Partitioning***Peter Deayton and Chung-Ping Chung***S4-3 TrC-MC: Decentralized Software Transactional Memory for Multi-Multicore Computers***Kinson Chan and Cho-Li Wang***S4-4 CU2CL: A CUDA-to-OpenCL Translator for Multi- and Many-core Architectures***Gabriel Martinez, Mark Gardner and Wu-chun Feng***S4-5 PADS: A Pattern-Driven Stencil Compiler-Based Tool for Reuse of Optimizations on GPGPUs***Dongni Han, Shixiong Xu, Li Chen and Lei Huang***S4-6 Architecture-Aware Mapping and Optimization on a 1600-Core GPU***Mayank Daga, Tomas Scogland and Wu-chun Feng*

S5: Cluster, Grid, Cloud Computing and Services – II**Time:** Thursday, Dec. 8, 15:30-17:30**Room:** B1-Room A**Session Chair:** Prof. Chao-Chin Wu, National Changhua University of Education, Taiwan**S5-1 A Method for Improving Concurrent Write Performance by Dynamic Mapping Virtual Storage System Combined with Cache Management***Fen Li, Qingzhong Bu, Weiwei Li, Xiaoxuan Meng, Lu Xu and Jiangang Zhang***S5-2 Source Code Partitioning in Program Optimization***Murat Bolat, Kirk Kelsey, Xiaoming Li and Guang R. Gao***S5-3 Fair and Efficient Online Adaptive Scheduling for Multiple Sets of Parallel Applications***Hongyang Sun, Yangjie Cao and Wen-Jing Hsu***S5-4 Combining Multiple Metrics to Control BSP Process Rescheduling in Response to Resource and Application Dynamics***Rodrigo da Rosa Righi, Lucas Graebin, Rafael Bohrer Avila, Philippe Olivier Alexadre Navaux and Laércio Lima Pilla***S5-5 Roystonea: A Cloud Computing System with Pluggable Component Architecture***Chao-En Yen, Jyun-Shiung Yang, Pangfeng Liu and Jan-Jan Wu*

S5-6 A Static Task Scheduling Framework for Independent Tasks Accelerated Using a Shared Graphics Processing Unit

Teng Li, Vikram K. Narayana and Tarek El-Ghazawi

S5-7 Optimizing Dynamic Programming on Graphics Processing Units via Adaptive Thread-Level Parallelism

Chao-Chin Wu, Jenn-Yang Ke, Heshan Lin and Wu-chun Feng

S6: Mobile Computing – II

Time: Thursday, Dec. 8, 15:30-17:30

Room: B1-Room B

Session Chair: Prof. Matt Mutka, Michigan State University, USA

S6-1 Gossip-based Cooperative Caching for Mobile Phone Games in IMANETs

Xiaopeng Fan, Jiannong Cao, Yunhuai Liu and Yaobin He

S6-2 MR-DBSCAN: An Efficient Parallel Density-based Clustering Algorithm Using MapReduce

Yaobin He, Haoyu Tan, Wuman Luo, Huajian Mao, Di Ma, Shengzhong Feng and Jianping Fan

S6-3 RDTS: A Reliable Erasure-Coding Based Data Transfer Scheme for Wireless Sensor Networks

M. Sammer Srouji, Zhonglei Wang and Jörg Henkel

S6-4 Data Collection with Multiple Controlled Mobile Nodes in Wireless Sensor Networks

Chao Wang and Huadong Ma

S6-5 Rendezvous Enhancement in Arbitrary-Duty-Cycled Wireless Sensor Networks

Chih-Min Chao and Lin-Fei Lien

S6-6 Dynamic Data Forwarding in Low-Duty-Cycle Sensor Networks

Yi Duan, Xiaobing Wu, Fan Wu and Guihai Chen

S7: Parallel Algorithms and Applications – II

Time: Thursday, Dec. 8, 15:30-17:30

Room: B1-Room C

Session Chair: Prof. Wei-Chung Hsu, National Chiao Tung University, Taiwan

- S7-1 Building High-performance Application Protocol Parsers on Multi-core Architectures**
Kai Zhang, Junchang Wang, Bei Hua and Xinan Tang
- S7-2 Design and Implementation of MapReduce Using the PGAS Programming Model with UPC**
Carlos Teijeiro, Guillermo L. Taboada, Juan Touriño and Ramón Doallo
- S7-3 Reflex Barrier: A Scalable Network-Based Synchronization Barrier**
Ahmad Anbar, Olivier Serres and Tarek El-Ghazawi
- S7-4 Is It Time to Rethink Distributed Shared Memory Systems?**
Bharath Ramesh, Calvin J. Ribbens and Srinidhi Varadarajan
- S7-5 Automatic Handling of Global Variables for Multi-threaded MPI Programs**
Gengbin Zheng, Stas Negara, Celso L. Mendes, Laxmikant V. Kalé and Eduardo R. Rodrigues

S8: Multicore Computing and Parallel/Distributed Architecture – II

Time: Thursday, Dec. 8, 15:30-17:30

Room: B1-Room D

Session Chair: Prof. Wu-chun Feng, Virginia Tech, USA

- S8-1 An Optimal and Flexible TCAM Software Simulation Algorithm**
Ming-Hwa Wang and Chen-Huei Chang
- S8-2 Trace Spectral Analysis Toward Dynamic Levels of Detail**
Germán Llort, Marc Casas, Harald Servat, Kevin Huck, Judit Giménez and Jesús Labarta
- S8-3 Simulation-based Performance Analysis and Tuning for a Two-level Directly Connected System**
Ehsan Tottoni, Abhinav Bhatele, Eric J. Bohm, Nikhil Jain, Celso L. Mendes, Ryan M. Moks, Gengbin Zheng and Laxmikant V. Kale
- S8-4 Power-Performance Comparison of Single-Task Driven Many-Cores**
Fuat Keceli, Tali Moreshet and Uzi Vishkin
- S8-5 Is Buffer Cache Still Effective for High Speed PCM (Phase Change Memory) Storage?**
Eunji Lee, Daeja Jin, Kern Koh and Hyokyung Bahn
- S8-6 StreamMR: An Optimized MapReduce Framework for AMD GPUs**
Marwa Elteir, Heshan Lin, Wu-chun Feng and Tom Scogland

S9: Cluster, Grid, Cloud Computing and Services – III

Time: Friday, Dec. 9, 13:00-15:00

Room: B1-Room A

Session Chair: Hideya Iwasaki, University of Electro-Communications, Japan

S9-1 SAW: Java Synchronization Selection from Lock or Software Transactional Memory

Yuji Yamada, Hideya Iwasaki and Tomoharu Ugawa

S9-2 Mercury: A Negotiation-based Resource Management System for Grids

Chien-Min Wang, Shao-Ting Wang, Hsi-Min Chen and Tse-Chen Yeh

S9-3 Catwalk-ROMIO: A Cost-Effective MPI-IO

Atsushi Hori, Keiji Yamamoto and Yutaka Ishikawa

S9-4 An Efficient Video Adaptation Scheme for SVC Transport Over LTE Networks

Rakesh Radhakrishnan and Amiya Nayak

S9-5 Optimization of an Instrumentation Tool for Stripped Win32/X86 Binaries

Santosh Sonawane and Tzi-cker Chiueh

S9-6 A Semantic Decentralized Chord-based Resource Discovery Model for Grid Computing

Abdul Khaliq Shaikh, Saadat M. Alhashmi and Rajendran Parthiban

S10: Mobile Computing – III

Time: Friday, Dec. 9, 13:00-15:00

Room: B1-Room B

Session Chair: Prof. Jen-Jee Chen, National University of Tainan, Taiwan

S10-1 A Cooperative Approach to Cache Consistency Maintenance in Wireless Mesh Networks

Wenzheng Xu, Weigang Wu, Hejun Wu and Jiannong Cao

S10-2 Attachment Learning for Multi-Channel Allocation in Distributed OFDMA Networks

Lu Wang, Kaishun Wu, Mounir Hamdi and Lionel M. Ni

S10-3 Dynamic Resource Allocation of IEEE 802.16j Networks with Directional Antenna

Jia-Da Wu, Wen-Shyang Hwang, Hao-Ming Liang and Ce-Kuen Shieh

S10-4 Optimal Mobility-aware Handoff in Mobile Environments

Lei Ni, Yanmin Zhu, Bo Li and Qianni Deng

S10-5 Towards Service-oriented Cognitive Networks over IP Multimedia Subsystems

Shih-Wen Hsu, Chi-Yuan Chen, Kai-Di Chang, Han-Chieh Chao and Jiann-Liang Chen

S10-6 Efficient SINR Estimating with Accuracy Control in Large Scale Cognitive Radio Networks

Yanchao Zhao, Jie Wu and Sanglu Lu

S11: Security and Trustworthy Computing-I

Time: Friday, Dec. 9, 13:00-15:00

Room: B1-Room C

Session Chair: Prof. Rachid Anane, Coventry University, UK

S11-1 New RFID Authentication Protocol with DOS-Attack Resistance

Hung-Yu Chien, Chin-I Lee, Shyr-Kuen Chen and Hung-Pin Hou

S11-2 BlockTapping: An Online Transparent Integrity Checker for Virtual Storage

Haifeng Fang

S11-3 A Trustworthy Computing of ADAPT Principle Guaranteeing Genuine Medical Image

Da-Yu Kao, Dushyant Goyal, Shih-Jeng Wang and Jonathan Liu

S11-4 A Study on Information Security Management with Personal Data Protection

Chien-Cheng Huang, Kwo-Jean Farn and Frank Yeong-Sung Lin

S11-5 A System Call Analysis Method with MapReduce for Malware Detection

Shun-Te Liu, Hui-ching Huang and Yi-Ming Chen

S11-6 Hybrid Provable Data Possession at Untrusted Stores in Cloud Computing

Narn-Yih Lee and Yun-Kuan Chang

S12: Multicore Computing and Parallel/Distributed Architecture - III

Time: Friday, Dec. 9, 13:00-15:00

Room: B1-Room D

Session Chair: Prof. Laxmikant Kale, University of Illinois at Urbana-Champaign, USA

S12-1 ANEPROF: Energy Profiling for Android Java Virtual Machine and Applications

Yi-Fan Chung, Chun-Yu Lin and Chung-Ta King

S12-2 Lonestar: An Energy-Aware Disk Based Long-Term Archival Storage System

Matthias Grawinkel, Markus Pargmann, Hubert Dömer and André Brinkmann

S12-3 A Versatile Nodal Energy Consumption Monitoring Method for Wireless Sensor

Network Testbed

Min Gao, Xiaorui Pan, Longhui Deng, Caiyan Huang, Dian Zhang and Lionel Ni

S12-4 Heterogeneity-aware Peak Power Management for Accelerator-based Systems

Guibin Wang and Yisong Lin

S12-5 Using a Pheromone Mechanism to Estimate the Size of Unstructured Networks

Yi-Shin Chen and Sheng-Kai Wang

S12-6 Building the Knowledge Base through Bayesian Network for Cognitive Wireless Networks

Niandong Du, Yuebin Bai, Lianhe Luo, Wei Wu and Jianli Guo

S13: Cyber-physical Systems and Internet of Things

Time: Friday, Dec. 9, 15:30-17:30

Room: B1-Room A

Session Chair: Prof. Chi-Sheng Shih, National Taiwan University, Taiwan

S13-1 On Least Idle Slot First Co-Scheduling of Update and Control Tasks in Real-time Sensing and Control Systems

Jiantao Wang, Song Han, Kam-yiu Lam and Aloysius K. Mok

S13-2 Charge Scheduling of Electric Vehicles in Highways through Mobile Computing

Shun-Neng Yang, Wei-Sheng Cheng, Yu-Ching Hsu, Chai-Hien Gan and Yi-Bing Lin

S13-3 Automatic Extraction of Pipeline Parallelism for Embedded Software Using Linear Programming

Daniel Cordes, Andreas Heinig, Peter Marwedel and Arindam Mallik

S13-4 Distributed Multi-Agent Schemes for Predictable QoS on Heterogenous Wireless Networks

Jiann-Liang Chen and Yanuarius Teofilus Larosa

S13-5 ERWF: Embedded Real-Time Workflow Engine for User-centric Cyber-Physical Systems

Wei-Chih Chen and Chi-Sheng Shih

S13-6 Browsing Architecture with Presentation Metadata for the Internet of Things

Sungho Bae, Daeyoung Kim, Minkeun Ha and Seong Hoon Kim

S14: Parallel Algorithms and Applications – III

Time: Friday, Dec. 9, 15:30-17:30

Room: B1-Room B

Session Chair: Prof. Iain A Stewart, Durham University, UK

S14-1 Automatic FFT Performance Tuning on OpenCL GPUs

Yan Li, Yunquan Zhang, Haipeng Jia, Guoping Long and Ke Wang

S14-2 Mapping of the BLASTP Algorithm Onto GPU Clusters

Weiguo Liu, Bertil Schmidt, Yongchao Liu, Gerrit Voss and Wolfgang Müller-Wittig

S14-3 Hybrid CPU-GPU Solver for Gradient Domain Processing of Massive Images

Sujin Philip, Brian Summa, Valerio Pascucci and Peer-Timo Bremer

S14-4 Fast Snippet Generation Based on CPU-GPU Hybrid System

Ding Liu, Ruixuan Li, Xiwu Gu, Kunmei Wen, Heng He and Guoqiang Gao

S14-5 A Failure Detection Service for Internet-based Multi-AS Distributed Systems

Dionei M. Moraes and Elias P. Duarte Jr.

S14-6 Classifier Grouping to Enhance Data Locality for a Multi-Threaded Object Detection Algorithm

Bo-Cheng Charles Lai, Chih-Hsuan Chiang and Guan-Ru Li

S15: Security and Trustworthy Computing – II

Time: Friday, Dec. 9, 15:30-17:30

Room: B1-Room C

Session Chair: Dr. Dayu Kao, Maritime Patrol Directorate General, Coast Guard Administration, Taiwan

S15-1 A Modified Hopfield Neural Network for Diagnosing Comparison-Based Multiprocessor Systems Using Partial Syndromes

Mourad Elhadef

S15-2 Secure Communication Scheme of VANET with Privacy Preserving

Ren Junn Hwang, Yu-Kai Hsiao and Yen-Fu Liu

S15-3 Detecting Chaff Perturbation on Stepping-Stone Connection

Shou-Hsuan Stephen Huang and Ying-Wei Kuo

S15-4 Security Analysis of an eSeal used in Taiwan Customs Officials

Chien-Lung Hsu, Yi-Shun Chan and Tzu-Wei Lin

S15-5 Robust e-Voting Composition

Richard Cooke and Rachid Anane

S16: P2P Computing

Time: Friday, Dec. 9, 15:30-17:30

Room: B1-Room D

Session Chair: Mr. Omer Luzzatti, RayV research, Israel

S16-1 A Tabu Based Cache to Improve Latency and Load Balancing on Prefix Trees

Nicolas Hidalgo, Luciana Arantes, Pierre Sens and Xavier Bonnaire

S16-2 Optimal P2P Cache Sizing: A Monetary Cost Perspective on Capacity Design of Caches to Reduce P2P Traffic

Haibin Zhai, Albert K. Wong, Hai Jiang, Yi Sun and Jun Li

S16-3 A New Auction Based Approach to Efficient P2P Live Streaming

Dingding Guo and Yu-Kwong Kwok

S16-4 Scalable and Reliable Live Streaming Service through Coordinating CDN and P2P

Zhi Hui Lu, Xiao Hong Gao, Si Jia Huang and Yi Huang

S16-5 Robust Fault-Tolerant Majority-Based Key-Value Store Supporting Multiple Consistency Levels

Ahmad Al-Shishtawy, Tareq Jamal Khan and Vladimir Vlassov

S16-6 Scalable Distributed Processing of Spatial Point Data

Martin Raack and Odej Kao

Workshop Program

W1: The First International Workshop on Future Internet and Cloud Networking (FICN-2011)

Time: Wednesday, Dec. 7, 10:50-12:30

Room: B1-Room A

Session Chair: Dr. Te-Lung Liu, National Center for High-Performance Computing, Taiwan

W1-1 The Implementation of Multilayer Virtual Network Management System on NetFPGA

Li-Der Chou, Yao-Tsung Yang, Wen-Pei Chang, Te-Chin Chang, Yuan-Mao Hong, Ce-Kuen Shieh and Sheng-Wei Huang

W1-2 Creating Future Networks: Designing, Implementing, and Operating Advanced Experimental Network Research Testbeds

Joe Mambretti, Jim Chen and Fei Yeh

W1-3 Network Virtualization with Cloud Virtual Switch

Hui-Min Tseng, Hui-Lan Lee, Jen-Wei Hu, Te-Lung Liu, Jee-Gong Chang, and Wei-Cheng Huang

W1-4 Improving Speculative Execution Performance with Coworker for Cloud Computing

Sheng-Wei Huang, Tzu-Chi Huang, Syue-Ru Lyu, Ce-Kuen Shieh and Yi-Sheng Chou

W2: 2011 International Workshop on Network & System Security - I

Time: Wednesday, Dec. 7, 08:50-10:30

Room: B1-Room B

Session Chair: Dr. Wei-Ho Chung, Research Center for Information Technology Innovation, Sinica, Taiwan

W2-1 Efficient Identity-Based Key Management for Configurable Hierarchical Cloud Computing Environment

Jyun-Yao Huang, I-En Liao and Cheng-Kang Chiang

W2-2 Simulation of Anti-Malware User Support System Using Queuing Network Model

Nobutaka Kawaguchi, Takayuki Yoda, Hiroki Yamaguchi, Toshihiko Kasagi and Yuji Hoshizawa

W2-3 The Low-cost Secure Sessions of Access Control Model for Distributed Applications by Public Personal Smart Cards

Kuo-Yi Chen, Chin-Yang Lin and Ting-Wei Hou

W2-4 Trust Issues That Create Threats for Cyber Attacks in Cloud Computing

Md Tanzim Khorshed, A. B. M. Shawkat Ali and Saleh A. Wasimi

W2-5 Reactor Containment Dependability Analysis in Safety Critical Nuclear Power Plants: Design, Implementation and Experience

Chi-Shiang Cho, Wei-Ho Chung, Deyun Gao, Hongke Zhang and Sy-Yen Kuo

W2: 2011 International Workshop on Network & System Security - II

Time: Wednesday, Dec. 7, 10:50-12:30

Room: B1-Room B

Session Chair: Prof. Elias P. Duarte, Jr., Dept. Informatics, Federal University of Parana, Brazil

W2-6 Malware Virtualization-Resistant Behavior Detection

Ming-Kung Sun, Mao-Jie Lin, Michael Chang, Chi-Sung Laih and Hui-Tang Lin

W2-7 A Revised Ant Colony Optimization Scheme for Discovering Attack Paths of Botnet

Ping Wang, Hui-Tang Lin and Tzy Shiah Wang

W2-8 Secure Mechanism for Mobile Web Browsing

Chia-Mei Chen and Ya-Hui Ou

W2-9 Visualization System for Log Analysis with Probabilities of Incorrect Operation

Chifumi Nishioka, Masahiro Kozaki and Ken-ichi Okada

W2-10 Transparent Communications for Applications Behind NAT/Firewall Over any Transport Protocol

Elias P. Duarte Jr., Kleber V. Cardoso, Micael O.M.C. de Mello and João G.G. Borges

W3: 2011 International Workshop on the Internet of Things - I

Opening Remark

Keynote Talk

Topic: Envisioning IoT Technology for Consumer Electronics

Speaker: Prof. Jin Mitsugi, AutoID Lab Japan, Keio University

Time: Wednesday, Dec. 7, 08:50-10:30

Room: B1-Room C

Session Chair: Prof. Tao Ma, Beijing University of Posts and Telecommunications, China

W3-1 Internet of Things Architecture based on Integrated PLC and 3G Communication Networks

Han-Chuan Hsieh and Chi-Ha Lai

W3-2 On the Disruptive Potentials in Internet of Things

Tao Ma and Chunhong Zhang

W3: 2011 International Workshop on the Internet of Things - II

Time: Wednesday, Dec. 7, 10:50-12:30

Room: B1-Room C

Session Chair: Prof. Andreas Ruppen, Département d'informatique, Université de Fribourg ,
Switzerland

W3-3 A Restful Architecture for Integrating Decomposable Delayed Services within the Web of Things

Andreas Ruppen, Jacques Pasquier and Tony Hürlimann

W3-4 Adaptive Traffic-aware Power-saving Protocol for IEEE 802.11 Ad Hoc Networks

Yeong-Sheng Chen, Min-Kai Tsai, Lung-Sheng Chiang and Der-Jiunn Deng

W3-5 Passive Tag for Multi-carrier RFID Systems

Ming-Hsien Lee, Chia-Yu Yao and Hsin-Chin Liu

W3-6 A Study of Comfort Measuring System Using Taxi Trajectories

Li-Ping Tung, Tsung-Hsun Chien, Ting-An Wang, Cheng-Yu Lin, Shyh-Kang Jeng and Ling-Jyh Chen

W4: 2011 IEEE International Workshop on Digital Computing Infrastructure and Applications (DCIA'11) - I

Time: Wednesday, Dec. 7, 13:40-15:20

Room: B1-Room A

Session Chair: Prof. Cheng Fu, SIAT, Chinese Academy of Sciences, China

W4-1 Characterizing Fine-Grain Parallelism on Modern Multicore Platform

Xuhao Chen, Wei Chen, Jiawen Li, Zhong Zheng, Li Shen and Zhiying Wang

W4-2 A Time-Series Based Precopy Approach for Live Migration of Virtual Machines

Bolin Hu, Zhou Lei, Yu Lei, Dong Xu and Jiandun Li

W4-3 Energy-aware High Performance Computing: A Taxonomy Study

Chang Cai, Lizhe Wang, Samee U. Khan and Jie Tao

W4-4 Energy-aware Depth Map Generation for 3D Portrait on Android Systems

Chia-Hui Kao, Chung-Ta King and Shau-Yin Tseng

W4: 2011 IEEE International Workshop on Digital Computing Infrastructure and Applications (DCIA'11) - II

Time: Wednesday, Dec. 7, 15:50-17:30

Room: B1-Room A

Session Chair: Prof. Dan Chen, China University of Geosciences, China

W4-5 Towards Providing Cloud Functionalities for Grid Users

Weizhou Peng, Jie Tao, Lizhe Wang, Holger Marten and Dan Chen

W4-6 A Hybrid Simulation of Large Crowd Evacuation

Xing Wei, Muzhou Xiong, Xuguang Zhang and Dan Chen

W4-7 Task Scheduling of Massive Spatial Data Processing Across Distributed Data Centers: What's New?

Weijing Song, Shasha Yue, Lizhe Wang, Wanfeng Zhang and Dingsheng Liu

W4-8 Volunteer Sensing: The New Paradigm of Social Sensing

Shasha Liu, Juan Yang, Bingyan Li and Cheng Fu

W5: The Third International Workshop on Hot Topics in Peer-to-peer computing and Online Social neTworking (HotPOST'11) - I

Opening Remark(Workshop report, TPC report, best paper award)

Keynote talk

Topic: Social Engineering Approach to Computer Systems Design

Speaker: Dr. Pan Hui, Deutsche Telekom Laboratories

Time: Wednesday, Dec. 7, 13:40-15:20

Room: B1-Room B

Session Chair: Prof. Hung-Chang Hsiao, National Cheng Kung University, Taiwan

W5-1 How Helpful Can Social Network Friends Be in Peer-to-Peer Video Distribution?

Maria Luisa Merani

W5-2 Participation and Departure Processes of Nodes in Connection Graph

Mamoru Kobayashi, Susumu Shibusawa, Hiroshi Ohno and Tatsuhiro Yonekura

W5-3 Social Trust and Reputation in Online Social Networks

Eng Keong Lua, Ruichuan Chen and Zhuhua Cai

W5: The Third International Workshop on Hot Topics in Peer-to-peer computing and Online Social networking (HotPOST'11) - II

Time: Wednesday, Dec 7, 15:50-17:30

Room: B1-Room B

Session Chair: Prof. Eng Keong Lua, Carnegie Mellon University, USA

W5-4 Towards a Common Architecture to Interconnect Heterogeneous Overlay Networks

Vincenzo Ciancaglini, Luigi Liquori and Giang Ngo Hoang

W5-5 A Batch Join Scheme for Flash Crowd Reduction in IPTV Systems

Tein Yaw Chung and Odin Lin

W5-6 Catching Preference Drift with Initiators in Social Network

Qiang Wang and Qianni Deng

W5-7 Wisdom of the Crowd: Incorporating Social Influence in Recommendation Models

Shang Shang, Pan Hui, Sanjeev R. Kulkarni and Paul W. Cuff

W5-8 Stochastic Load Rebalancing in Distributed Hash Tables

Che-Wei Chang and Hung-Chang Hsiao

W5-9 Data Selection for User Topic Model in Twitter-Like Service

Zheng Yang, Jingfang Xu and Xing Li

W6: The 5th International Workshop on Peer-to-Peer Networked Virtual Environments (P2PNVE'11) - I

Time: Wednesday, Dec 7, 13:40-15:20

Room: B1-Room C

Session Chair: Prof. Chow-Sing Lin, National University of Tainan, Taiwan

W6-1 An Optimal Topology for a Static P2P Live Streaming Network with Limited Resources

Jonathan Stern, Omer Luzzatti, Raphael Goldberg, Eran Weiss and Mira Gonen

W6-2 Efficient Hybrid Push-Pull Based P2P Media Streaming System

Chee Yik Keong, Poo Kuan Hoong and Ting Choo Yee

W6-3 Service Availability for P2P on-demand Streaming with Dynamic Buffering

Chow-Sing Lin and Meng-Jia Yan

W6-4 RELookup: Providing Resilient and Efficient Lookup Service for P2P-VoD Streaming

Xu Zhang, Zhenhua Li, Tieying Zhang, Liangpeng He and Guihai Chen

W6-5 Adaptive and Efficient Peer Selection in Peer-to-Peer Streaming Networks

Tai-Hua Hsiao and Yu-Ben Miao

W6-6 Peer-to-Peer Immersive Voice Communication for Massively Multiplayer Online Games

Chi-Wen Fann, Jehn-Ruey Jiang and Jih-Wei Wu

W6: The 5th International Workshop on Peer-to-Peer Networked Virtual Environments (P2PNVE'11) - II

Time: Wednesday, Dec. 7, 15:50-17:30

Room: B1-Room C

Session Chair: Prof. Yi-Shin Chen, National Tsing Hua University, Taiwan

W6-7 Using P2P Networks to Repair Packet Losses in Digital Video Broadcasting Systems

Yung-Tsung Weng, Ce-Kuen Shieh, Tzu-Chi Huang and Yu-Ben Miao

W6-8 Spatial Queries Processing in Autonomous Mobile System Environment

Tomoya Kambara, Kazuya Tamaki, Toshinori Muranaka and Shinichi Ueshima

W6-9 Peer Content Groups for Reliable and Transparent Content Access in P2P Networks

Ana Flávia B. Godoi and Elias P. Duarte Jr.

W6-10 SSNG: A Self-Similar Super-Peer Overlay Construction Scheme for Super Large-Scale P2P Systems

Hung-Yi Teng, Chien-Nan Lin and Ren-Hung Hwang

W6-11 On the Power Law Property of Latency-Reducing Relays

Tao Ma and Qingyuan Hu

W6-12 SYMA: A Synchronous Multihop Architecture for Wireless Ad Hoc Multiplayer Games

Ta-Yu Huang, Chih-Ming Lin, Jehn-Ruey Jiang, Wei Tsang Ooi, Maha Abdallah and Khaled Boussetta

W7: 2011 IEEE International Workshop on Parallel and Distributed Computing in Remote Sensing (IEEE PDCRS 2011) - I

Time: Wednesday, Dec. 7, 13:40-15:20

Room: B1-Room D

Session Chairs: Prof. Jiaji Wu, Xidian University, China

Yong Fang, Northwest A&F University, China

W7-1 FPGA Design of an Automatic Target Generation Process for Hyperspectral Image Analysis

Sergio Bernabé, Sebastián López, Antonio J. Plaza, Roberto Sarmiento and Pablo Garcia Rodriguez

W7-2 Accelerating the Kalman Filter on a GPU

Min-Yu Huang, Shih-Chieh Wei, Bormin Huang, and Yang-Lang Chang

W7-3 Parallel Processing with MPI for Inter-band Registration in Remote Sensing

Taeyoung Kim, Myungjin Choi and Tae-Byeong Chae

W7-4 Volume Data Numerical Integration and Differentiation Using CUDA

Ming-Da Chen, Tung-Ju Hsieh and Yang-Lang Chang

W7-5 Parallel Computation of the Weather Research and Forecast (WRF) WDM5 Cloud Microphysics on a Many-Core GPU

Jun Wang, Bormin Huang, Allen Huang, and Mitchell D. Goldberg

W7: 2011 IEEE International Workshop on Parallel and Distributed Computing in Remote Sensing (IEEE PDCRS 2011) - II

Time: Wednesday, Dec. 7, 15:50-17:30

Room: B1-Room D

Session Chairs: Prof. Tung-Ju Hsieh, National Taipei University of Technology, Taiwan

Myungjin Choi, Korea Aerospace Research Institute, Korea

W7-6 Commodity Cluster-Based Parallel Implementation of an Automatic Target Generation Process for Hyperspectral Image Analysis

Sergio Bernabé and Antonio Plaza

W7-7 GPU Implementation of Orthogonal Matching Pursuit for Compressive Sensing

Yong Fong, Liang Chen, Jiaji Wu, and Bormin Huang

W7-8 Fast Band Selection for Hyperspectral Imagery

He Yang and Qian Du

W7-9 Parallel Implementation of Edge-Directed Image Interpolation on a Graphics Processing Unit

Jiaji Wu, Tao Li, and Bormin Huang

W7-10 Single-Phase Wireless LAN Based Multi-Floor Indoor Location Determination System

A.S. Al-Ahmadi, T.A. Rahman, M.R. Kamarudin, M.H. Jamaluddin and A.I. Omer

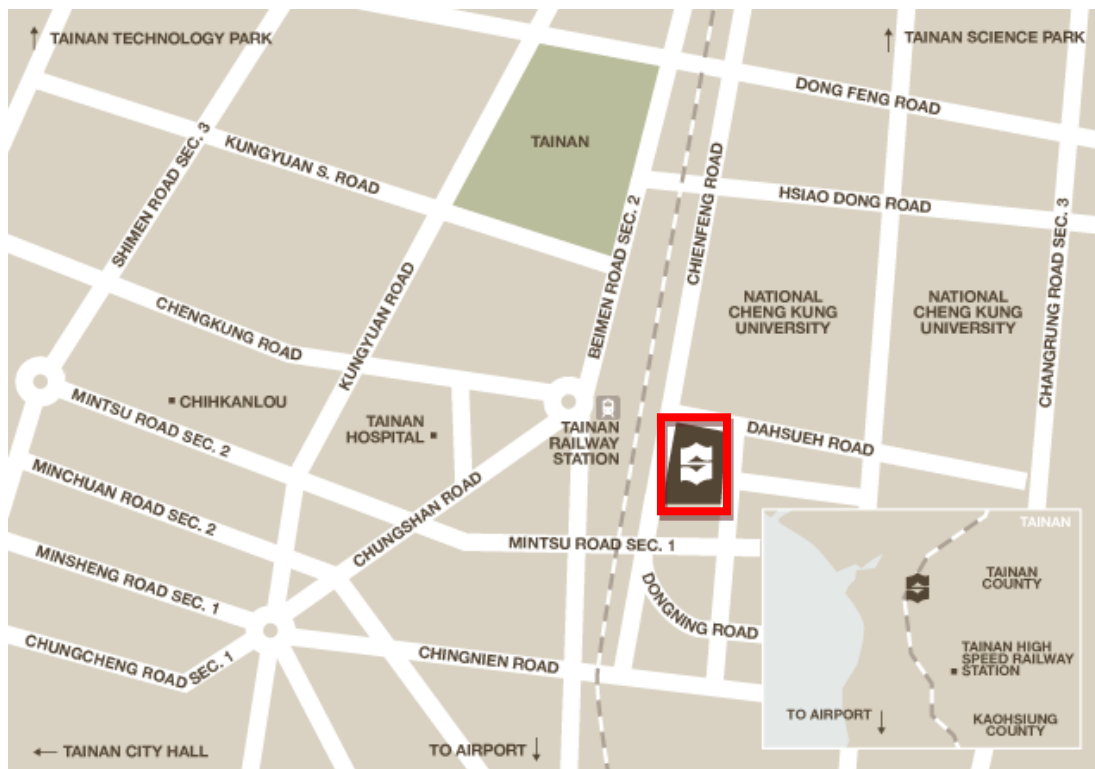
Transportation Information

Shangri-La International Hotel

Shangri-La's Far Eastern Plaza Hotel, Tainan is Shangri-La Hotels and Resorts' second luxury property in Taiwan. Located in the heart of downtown Tainan, it is the finest international deluxe Tainan luxury hotel in southern Taiwan. This luxury Tainan hotel provides guests with first-rate facilities and services, as well as signature Shangri-La hospitality.

Address: 89 Section West, University Road, Tainan City 70146, Taiwan

Telephone: (886 6) 702 8888



(Data source: <http://www.feph.com.tw/tainan/#>)

Introduction of Tainan City

Tainan City is a city in southern Taiwan. It is the fifth largest after New Taipei, Kaohsiung, Taichung, and Taipei. It was formerly a provincial city, and in 2010, the provincial city merged with the adjacent Tainan County to form a single special municipality. Tainan faces the Taiwan Strait in the west and south. Tainan's complex history of comebacks, redefinitions and renewals inspired its popular nickname "City of the Phoenix."

Tainan was initially established by the Dutch VOC as a ruling and trading base which called Fort Zeelandia during the period of Dutch rule on Taiwan. After Dutch colonists were defeated by Koxinga in 1661, Tainan was remained as the capital of the Tungning Kingdom until 1683 and afterwards the capital of Taiwan prefecture under the rule of Qing Dynasty until 1887, when the Qing Dynasty established Taipei as the new provincial capital. Tainan has been historically regarded as one of the oldest cities in Taiwan, and its former name, Tayouan, has been claimed to be the source of the name Taiwan. It is also one of Taiwan's cultural capitals, for its rich folk cultures including the famous local snack food, extensively preserved Taoist rites and other living local traditions covering child birth to funeral. The city houses the first Confucian school–temple, built in 1665, the remains of the Eastern and Southern gates of the old city, and countless other historical monuments. Tainan claims more Buddhist and Taoisttemples than any other city in Taiwan.

(Data source: <http://en.wikipedia.org/wiki/Tainan>)

Platalea minor



Black-faced Spoonbill

(Winter migratory species/ Category I protected species)

The distinctive feature of a spoonbill is its long, flat bill. It also has a “black face” because of its nude, black skin surrounding its eye area. The earliest appearance of Black-faced Spoonbills was recorded along the coast of Anping. Today, Sihcao is still an important habitat for these birds, also called one of the “Three Treasures” of Tainan.

(Data source: <http://ecobird.tncg.gov.tw/ecobird/>)

Conference Lunch

A trendy open-kitchen restaurant creates Tainan's most extensive buffet in a vibrant setting where the chefs take centre stage. Enjoy a world of exquisite dining and immerse yourself in a stylish environment.

Date: Dec 7-9, 2011

Time: 11:30-14:30

Restaurant: Café at Far Eastern

Location: 10th Floors of Shangri-La International Hotel



(Data source: <http://www.feph.com.tw/tainan/#>)

Conference Banquet

Date: Dec. 8, 2011

Time: 18:30-20:30

Restaurant: Cheng Kung Function Room

Location: 3th Floors of Shangri-La International Hotel

Host

- National Cheng Kung University

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- Intel Corporation
- Tainan City Government
- Taiwan Association of Cloud Computing

