Program

Time	A	B	C	D	E	Hallway
Monday, April 30						
08:30-09:30	Registration					
09:30-09:45	*Opening Remark & Welcome Speech*					
09:45-10:30	*Plenary Keynote Speech 1: Dr. Tzi-Cker Chiueh*					
10:30-11:15	*Plenary Keynote Speech 2: Prof. Ness B. Shroff*					
11:15-12:00	*Plenary Keynote Speech 3: Dr. Yongxing Zhou*					
12:00-13:30	*Luncheon*					
13:30-15:00	*Panel Discussion*					
15:00-15:30	*Coffee Break*					
15:30-17:00	*Big Data & Machine Learning 1*			*Wireless Comm. & Networks 1*	*Optical Comm. & Photonics 1*	*Poster Session 1*
17:00-17:30	*Break*					
17:30-19:00	*Banquet*					
Tuesday, May 1						
09:00-09:45	*Plenary Keynote Speech 4: Prof. James Hwang*					
09:45-10:30	*Plenary Keynote Speech 5: Prof. Jia-Ming Liu*					
10:30-10:50	*Coffee Break*					
10:50-11:35	*Plenary Keynote Speech 6: Prof. Cheng-Shang Chang*					
11:35-12:20	*Plenary Keynote Speech 7: Prof. Yu-Dong Yao*					
12:20-13:30	*Luncheon*					
13:30-15:00	*Big Data & Machine Learning 2*	*Invited Tutorial Talk*	*Wireless Comm. & Networks 2*	*Wireless Comm. & Networks 3*	*Optical Comm. & Photonics 2*	*Poster Session 2*
15:00-15:30	*Coffee Break*					
15:30-17:00	*Wireless Comm. & Networks 4*		*Wireless Comm. & Networks 5*	*Wireless Comm. & Networks 6*	*Optical Comm. & Photonics 3*	

Monday, April 30

Monday, April 30, 08:30 - 09:30

Registration TOP ⬆

Registration until 05:00 pm.

Monday, April 30, 09:30 - 09:45

Opening Remark & Welcome Speech TOP ⬆

Opening Remark:
Prof. Han-Chieh Chao (President, National Dong Hwa University)

Welcome Speech:
Dr. Yuan-Kuang Tu (President, Northern Taiwan Business Group Chunghwa Telecom)

Monday, April 30, 09:45 - 10:30

Plenary Keynote Speech 1: Dr. Tzi-Cker Chiueh TOP ⬆
Title: PCIe Express Networking for Disaggregated Rack Architecture
Speaker: Dr. Tzi-Cker Chiueh (Industrial Technology Research Institute, Taiwan)
   Chair: Prof. Yi-Bing Lin (National Chiao Tung University, Taiwan)

Abstract:

PCI Express (PCIe) was originally designed as a local bus interconnect technology for connecting CPUs, GPUs and I/O devices inside a machine, and has since been enhanced to be a full-blown switched network that features point-to-point links, hop-by-hop flow control, end-to-end re-transmission, etc. Recently, researchers have further extended PCIe into an intra-rack interconnect designed to connect multiple servers within the same rack, and to enable these servers to share memory and I/O resources. In this talk, I will go over the system architecture and design of ITRI's PCIe network, and show how it supports the vision of disaggregated rack architecture with more flexible rack-wide resource sharing.

Monday, April 30, 10:30 - 11:15

Plenary Keynote Speech 2: Prof. Ness B. Shroff TOP ⬆
Title: A Fresh Look at an Old Problem: Network Utility Maximization ??Convergence, Delay, and Complexity
Speaker: Prof. Ness B. Shroff (Ohio State University, USA)
   Chair: Prof. Yi-Bing Lin (National Chiao Tung University, Taiwan)

Abstract:

Network Utility Maximization has been studied for resource allocation problems in communication networks for nearly two decades. Nonetheless, a major weakness of previous solutions is that they do not converge quickly. This implies that in dynamic networks the algorithms are often operating in sub-optimal conditions, since the network configurations may change over time-scales that are faster than the time-scales of convergence. This could result in unacceptably large delays and buffer overflows in the network. Thus, a major challenge that continues to remain open is how to develop a distributed congestion control, routing and scheduling algorithms that can simultaneously provide utility optimality, fast convergence speed, and low delay. To address this challenge we take a fresh perspective on this old problem and develop a new algorithm that offers the fastest known convergence speed, vanishing utility optimality gap with finite queue length, and low routing complexity. Our key contributions in this work are: i) the design of a new joint congestion control and routing algorithm based on a type of inexact Uzawa method in the Alternating Directional Method of Multiplier; ii) a new theoretical path to prove global and linear convergence rate without requiring the full rank assumption of the constraint matrix; and iii) a clear path for implementing the proposed method in a fully distributed fashion.

<div align="center">**Monday, April 30, 11:15 - 12:00**</div>

Plenary Keynote Speech 3: Dr. Yongxing Zhou TOP ⬆

   Title: 5G - Challenges and Beyond
   Speaker: Dr. Yongxing Zhou (Wireless Radio Access Technology Department, Huawei)
     Chair: Prof. Yi-Bing Lin (National Chiao Tung University, Taiwan)

Abstract:

In addition to provision of much improved mobile Internet user experience, 5G is also expected to be the key driving force behind the shift of digitalization of all industries and a more intelligent, connected world. This has brought unprecedented challenges to radio access and mobile core networks. Technology and spectrum innovations have to meet divergent requirements within an integrated/unified 5G standard framework. This talk will introduce progress and roadmap of 5G standard and commercial developments and further discuss evolution of 5G with opportunities and challenges. New evaluation metrics, spectrum and technology innovations will be analyzed and evaluated to demonstrate the potentials of accelerating business success of 5G and IoT.

<div align="center">**Monday, April 30, 13:30 - 15:00**</div>

Panel Discussion TOP ⬆

   Panel Discussion
     Chair: Prof. Wen-Tsuen Chen (Academia Sinica, Taiwan)

   Speakers:
     Prof. Wen- Tsuen Chen (Academia Sinica, Taiwan),
     Dr. Yuan-Kuang Tu (Chunghwa Telecom, Taiwan),
     Prof. Yi-Bing Lin (National Chiao Tung University, Taiwan),
     Dr. Li Fung Chang (5G Technology Program Office, Department of Industrial Technology/ Ministry of Economic Affairs, Taiwan),
     Prof. Li-Chun Wang (National Chiao-Tung University, Taiwan),
     Prof. Chia-Wen Lin (National Tsing Hua University, Taiwan)

Big Data & Machine Learning 1 TOP ⬆

Room: A

Chair: Prof. Chuan-Ming Liu (National Taipei University of Technology, Taiwan)

15:30 *Invited Talk: Blind Deconvolution Based Super-resolution Imaging with ROSIS/HYDICE/AVIRIS Sensors via Big Data Convex Optimization*
Chong-Yung Chi (National Tsing Hua University, Taiwan)

16:10 *Using Hybrid Support Vector Regression to Predict Agricultural Output*
Ting-Zuo Jheng, Tsung-Hao Li and Chien-Pang Lee (National Kaohsiung University of Science and Technology, Taiwan)
pp. 1-3

16:27 *Using An English Language Education APP to Understand the English Level of Students*
Wing-Lun Siu and Tze-Suen Lim (Feng Chia University, Taiwan); Yu-Ren Chen (FengChia University, Taiwan); Yi-Lin Chen (Providence University, Taiwan); Yan-An Jou (National Quemoy University, Taiwan); Yi-Chung Chen (National Yunlin University of Science and Technology, Taiwan)
pp. 4-6

16:44 *Finding the Personal Fitness Trip Plan In Road Networks*
Yu Chi Chung (Chang Jung Christian University, Taiwan); I-Fang Su (Nation Cheng Kung University, Taiwan); Chiang Lee (National Cheng-Kung University, Taiwan); Chao-Yue He (National Cheng Kung University, Taiwan)
pp. 7-8

Wireless Comm. & Networks 1 TOP ⬆

Room: D

Chair: Prof. Chih-Yu Wen (National Chung Hsing University, Taiwan)

15:30 *Probabilistic Channel Feedback for Multiuser MIMO Broadcast Channels with Orthogonal Beamforming*
Hsuan-Jung Su and Pin-Wen Su (National Taiwan University, Taiwan)
pp. 17-22

15:48 *Precoding Design in Two-Way Cooperative System with Energy Harvesting Relay*
Wan-Jen Huang (National Sun Yat-Sen University, Taiwan); Han-Chiuan Chiu (National Sun Yat-sen University, Taiwan)
pp. 12-16

16:06 *Using Cooperative PIR Sensing for Human Indoor Localization*
Kuan-Chung Lai, Bing-Huan Ku and Chih-Yu Wen (National Chung Hsing University, Taiwan)
pp. 23-27

16:24 *A Cyber-Physical System Framework towards Smart City and Urban Computing to Aid People with Disabilities*
Martin Goldberg (Graduate Center, City University of New York, USA); Zhanyang Zhang (College of Staten Island/City University of New York & Graduate Center/City University of New York, USA)
pp. 28-32

16:42 *Energy Efficient Service Embedding in IoT Networks*
Haider Al-Shammari, Ahmed Lawey, Taisir El-Gorashi and Jaafar Elmirghani (University of Leeds, United Kingdom (Great Britain))
pp. 33-37

Optical Comm. & Photonics 1 TOP

Room: E

Chair: Prof. Hai-Han Lu (National Taipei University of Technology, Taiwan)

15:30 *A 25-Gbps UWOC System with a Two-Stage Injection-Locked VCSEL Transmitter and an Afocal Scheme*
Pei-Hsien Chew, De-Yu Chen, You-Ruei Wu, Zhen-Han Wang, Chung-Yi Li and Hai-Han Lu (National Taipei University of Technology, Taiwan)
pp. 38-42

16:00 *Non-invasive vital signs monitoring system based on smart sensor mat embedded with optical fiber interferometer*
Changyuan Yu (The Hong Kong Polytechnic University, P.R. China)

16:30 *Maximally Uncoupled Delay Length for Broadband Mach-Zehnder Directional Coupler*
Shih-Hsiang Hsu, Hong-Shen Chen, Yi-Hsuan Tseng and Meng-Hui Shen (National Taiwan University of Science and Technology, Taiwan)
pp. 43-44

16:45 *Wireless Wavelength Hopping with AWG/Optical Switch Implemented Secure Audio/Digital Signals*
Hsu-Chih Cheng (National Formosa University, Taiwan); Yao-Tang Chang (Kao Yuan University, Taiwan); Yu-Xiang Zheng (National Formosa University, Taiwan)
pp. 45-47

Poster Session 1 TOP

Room: Hallway

Chair: Prof. Chun-Chyuan Chen (National Dong Hwa University, Taiwan)

Packet Forwarding Enhancement for Virtualized Next-Generation Core Networks
Whai-En Chen (National Ilan University, Taiwan)
pp. 64-65

Carryable and Automatically Balanced Intravenous Drip Frame and Using Method Thereof
Ming-Feng Wu (Chest Medicine/ Taichung Veterans General Hospital/Taichung/TW (ROC), Taiwan); Chia-Shan Chen, I-Shan Chen and Chih-Yu Wen (National Chung Hsing University, Taiwan)
pp. 57-58

Energy-Saving Scheduling in the 3GPP Narrowband Internet of Things (NB-IoT) Using Energy-Aware Machine-to-Machine Relays
Cheng-Yu Chen, Cheng-Sen Huang, Song-Yi Huang and Jen-Yeu Chen (National Dong Hwa University, Taiwan)
pp. 66-68

A Solar Powered Long Range Real-Time Water Quality Monitoring System by LoRaWAN
Yan-Ting Liu, Bo-Yi Lin, Xiao-Feng Yue, Zong-Xuan Cai, Zi-Xian Yang, Song-Yi Huang and Jen-Yeu Chen (National Dong Hwa University, Taiwan)
pp. 69-70

Wildfire Monitoring and Guidance System
Hsin-Te Wu and Jhong-Kai Chen (National Penghu University of Science and Technology, Taiwan); Chun-Wei Tsai (National Chung Hsing University, Taiwan)
pp. 61-63

A Low-cost Household Optical Channel for Wireless Control
Tang-Jen Liu and Fenq-Lin Jenq (Far East University, Taiwan)
pp. 48-51

Exact analytical BER expression in FSO using α ??μ distribution proposed as an approximation of Gamma-Gamma PDF
Rajeev Kumar (Shiv Nadar University, India)
pp. 52-56

A Power Allocation Scheme Using Non-Cooperative Game Theory in Ultra-Dense Networks
Xiaoqian Wang, Bei Liu and Xin Su (Tsinghua University, P.R. China)
pp. 71-75

Utility Function Maximization-based Joint Cell Selection and Power Allocation for Heterogeneous M2M Communication Networks
Zhangfeng Ma (Key Lab of Mobile Communication Technology Chongqing University of Posts and Telecommunications, P.R. China); Rong Chai and Yin Zhou (Chongqing University of Posts and Telecommunications, P.R. China)
pp. 76-81

X-Duplex Relay with Self-interference Signal Energy Harvesting and Its Hybrid Mode Selection Method
Hong Tang (Chongqing University of Posts & Telecommunications, P.R. China); Xie Xian-Zhong and Jiujiu Chen (Chongqing University of Posts and Telecommunications, P.R. China)
pp. 82-87

Factor Analysis on Call Detail Record
Qingli Ma and Wen Wang (University of Science and Technology of China, P.R. China); Qing Yao (Institute of China Electronic System Engineering Corporation, P.R. China); Jingdi Zhou (Sichuan Center for International Peace and Development Study, P.R. China); Lei Guo (Institute of China Electronic System Engineering Corporation, P.R. China)
pp. 108-112

Tuesday, May 1, 09:00 - 09:45

Plenary Keynote Speech 4: Prof. James Hwang TOP ⬆

Title: How Can RF MEMS be as Successful as Other MEMS?
Speaker: Prof. James Hwang (Lehigh University, USA)
Chair: Prof. Yin-chieh Lai (National Chiao Tung University, Taiwan)

Abstract:

This talk will explore the major challenges for radio-frequency micro-electromechanical systems (RF MEMS) and ways to overcome them. MEMS is ubiquitous. For example, a smartphone can have many MEMS components including microphones/speakers, camera focus/vibration controls, micro-projectors, silicon clocks, position/motion sensors, pressure/humidity/temperature sensors, etc. In comparison, RF MEMS have not been widely used despite their promising performance. In fact, like many new technologies, RF MEMS followed the Gartner hype cycle to reach the peak of inflated expectations around 1995, only to crash to the trough of disillusionment around 2010. However, this also implies that they are now on the slope of enlightenment and may soon reach the plateau of productivity if major challenges can be overcome in a timely manner. The initial hype of RF MEMS originates from their inherent advantages in terms of lower loss, higher isolation, wider bandwidth, better linearity, and lower power consumption compared to their semiconductor counterparts. However, the hype quickly turned into disillusionment mainly due to the reliability issue. Over the following decade, the reliability issue was mostly overcome by careful choice of design, material and bias conditions, more for capacitive switches than ohmic switches. The main challenge then turned into a yield issue, which was largely overcome by fabrication through standard CMOS foundries instead of dedicated MEMS foundries. Now, the main issue of RF MEMS is insufficient performance advantage to overcome the entry barrier faced by any new technology in competition with the entrenched CMOS technology, such as in existing 3G/4G smartphone sockets. In this case, the savior appears to be the necessity for 5G wireless systems to expand above 6 GHz and to deploy phased arrays, which can only enlarge the inherent advantage of RF MEMS, especially capacitive MEMS. However, RF MEMS need to quickly increase their integration level with CMOS circuits. Otherwise, RF MEMS will risk inheriting the curse previously placed on compound semiconductors as "the technology of the future and it will always be."

Tuesday, May 1, 09:45 - 10:30

Plenary Keynote Speech 5: Prof. Jia-Ming Liu TOP ⬆

Title: Graphene photonics
Speaker: Prof. Jia-Ming Liu (University of California, USA)
Chair: Prof. Yin-chieh Lai (National Chiao Tung University, Taiwan)

Abstract:

Being a truly two-dimensional semiconductor that has a high electron mobility, graphene also has unique optical, optoelectronic, and plasmonic properties. Its properties vary significantly across the electromagnetic spectrum. In particular, it has very interesting optoelectronic properties in the terahertz spectral region. These special features imply opportunities for scientific research and novel photonic devices applications. In this talk, I will present give an overview on graphene photonics. I will present our theoretical and experimental studies on graphene plasmonics and will discuss our work on terahertz plasmonic waveguides and modulators that are enabled by graphene.

Plenary Keynote Speech 6: Prof. Cheng-Shang Chang TOP
 Title: Exponentially Twisted Sampling for Structural Network Analysis in Attributed Networks
 Speaker: Prof. Cheng-Shang Chang (National Tsing Hua University, Taiwan)
  Chair: Prof. Chin-Liang Wang (National Tsing Hua University, Taiwan)

Abstract:

In this talk, we provide a unified framework for structural network analysis in attributed networks, including centrality analysis and community detection. An attributed network, as a generalization of a graph, has node attributes and edge attributes that represent the "features" of nodes and edges. Traditionally, centrality analysis and community detection of a graph are done by providing a sampling method, such as a random walk, for the graph. To take node attributes and edge attributes into account, the sampling method in an attributed network needs to be twisted from the original sampling method in the underlining graph. For this, we consider the family of exponentially twisted sampling methods and propose using path measures to specify how the sampling method should be twisted. For signed networks, we define the influence centralities by using a path measure from opinions dynamics and the trust centralities by using a path measure from a chain of trust. For attributed networks with node attributes, we also define advertisement-specific influence centralities by using a specific path measure that models influence cascades in such networks. For networks with a distance measure, we define the path measure as the total distance along a path. By specifying the desired average distance between two randomly sampled nodes, we are able to detect communities with various resolution parameters. Various experiments are conducted to further illustrate these exponentially twisted sampling methods by using three real datasets: the political blogs, the MemeTracker dataset, and the WonderNetwork.

Plenary Keynote Speech 7: Prof. Yu-Dong Yao TOP
 Title: Machine Learning and Deep Learning in Wireless Communications Engineering
 Speaker: Prof. Yu-Dong Yao (Stevens Institute of Technology, USA)
  Chair: Prof. Chin-Liang Wang (National Tsing Hua University, Taiwan)

Abstract:

We will present AI research results of Machine Learning and Deep Learning as applied to wireless communications and cognitive radio networks. Specific topics include modulation classification, MAC protocol classification, and RF fingerprinting for radio terminal identification. Jamming and communications reliability issues will also be addressed.

Big Data & Machine Learning 2 TOP ⇧

Room: A

Chair: Dr. Chuan-Chi Lai (National Chiao Tung University, Taiwan)

13:30 *An Effective Method for Top-k Dominating Query Processing over Multiple Uncertain Data Streams*
Chuan-Ming Liu and Tien-Chun Wang (National Taipei University of Technology, Taiwan); Chuan-Chi Lai and Li-Chun Wang (National Chiao Tung University, Taiwan)
pp. 88-92

13:48 *A Prediction-Based Coordination Caching Scheme for Content Centric Networking*
Jiaying Yin, Lixin Li, Huisheng Zhang, Xu Li and Ang Gao (Northwestern Polytechnical University, P.R. China); Zhu Han (University of Houston, USA)
pp. 93-97

14:06 *Face Recognition Model Based on Privacy Protection and Random Forest Algorithm*
JianWu Zhang and Wei Shen (Hangzhou Dianzi University, P.R. China); LiFeng Liu (State Grid Shaoxing Power Supply Company, P.R. China); Zhendong Wu (Hangzhou Dianzi University, USA)
pp. 98-102

14:24 *Big Data Implementation for Small and Medium Enterprises*
Wasinee Noonpakdee, Acharaphun Phothichai and Thitiporn Khunkornsiri (Thammasat University, Thailand)
pp. 103-107

14:42 *Big data platform for air quality analysis and prediction*
Yue-Shan Chang, Kuan-Ming Lin, Yi-Ting Cai, Yu-Ren Zeng and Cheng-Xiang Hung (National Taipei University, Taiwan)
pp. 9-11

Invited Tutorial Talk TOP ⇧

Title: Deep convolutional neural networks and their application
Speaker: Prof. Chia-Wen Lin

Room: B

Abstract:

In the this talk, we will first briefly introduce the concept and applications of convolutional neural networks (CNNs) which are among the most successful deep neural networks. CNNs have powerful representation learning ability making them very successful in many supervised learning problems with a sufficiently large amount of labelled training data. Nevertheless, unsupervised learning applications have no labelled training data, making it difficult to learn CNN models from the unlabeled data. We will give an example to show how to apply CNNs to unsupervised learning problems such as large-scale image clustering. To this end, we propose a clustering CNN to jointly solve clustering and representation learning in an iterative manner. In the proposed method, given an input image set, we first randomly pick k samples and extract their features as initial cluster centroids using the proposed CNN with an initial model pre-trained from the ImageNet dataset. Mini-batch k-means is then performed to assign cluster labels to individual input samples for a mini-batch of images randomly sampled from the input image set until all images have been processed. Subsequently, the proposed CNN simultaneously updates the parameters of the proposed CNN and the centroids of image clusters iteratively based on stochastic gradient descent. We also propose a feature drift compensation scheme to mitigate the drift error caused by feature mismatch in representation learning. Experimental results demonstrate the proposed method outperforms start-of-the-art clustering schemes in terms of accuracy and storage complexity on large-scale image sets containing millions of images.

Wireless Comm. & Networks 2 TOP ⇧

Room: C

Chair: Dr. Lijun Dong (Huawei, USA)

13:30 *Information Exchange Oriented Clustering for Collaborative Vehicular System*
Lijun Dong (Huawei, USA); Richard Li (Beijing Huawei Digital Technologies Co., Ltd., P.R. China)
pp. 113-117

13:48 *Flow-Level QoS Assurance via IPv6 In-Band Signalling*
Lin Han (Huawei Technologies CO., LTD, Singapore); Yingzhen Qu and Lijun Dong (Huawei, USA); Richard Li (Beijing Huawei Digital Technologies Co., Ltd., P.R. China)
pp. 118-122

14:06 *SDN/NFV - A new approach of deploying network infrastructure for IoT*
Do Sinh, Luong Vy Le, Bao-Shuh Lin and Li-Ping Tung (National Chiao Tung University, Taiwan)
pp. 123-127

14:24 *Task Offloading and Resource Allocation in Mobile-Edge Computing System*
Te-Yi Kan, Yao Chiang and Hung-Yu Wei (National Taiwan University, Taiwan)
pp. 128-131

14:42 *A Novel Cache Scheme based on Content Popularity and User Locality for Future Internet*
Fan-Hsun Tseng (National Taiwan Normal University, Taiwan); Wei-Che Chien (National Chung Cheng University, Taiwan); Sheng-Jie Wang, Chin-Feng Lai and Han-Chieh Chao (National Ilan University, Taiwan)
pp. 132-136

Wireless Comm. & Networks 3 TOP ⬆

Room: D

Chair: Prof. Hsin-Piao Lin (National Taipei University of Technology, Taiwan)

13:30 *Cooperative Spectrum Sensing and Optimization on Multi-Antenna Energy Detection in Rayleigh Fading Channel*
Ping-Rong Lin, Yin-Tsong Chen, Po-Hao Chang and Shiann-Shiun Jeng (National Dong Hwa University, Taiwan)
pp. 137-141

13:48 *A Miniaturized T-Shaped MIMO Antenna for X-Band and Ku-Band Applications With Enhanced Radiation Efficiency*
Nirdosh Tanwar (Amity University, Noida, Uttar Pradesh, India); Cher Ming Tan (Chang Gung University, Taiwan); Malay Tripathy (Amity University, Noida, India)
pp. 142-146

14:06 *Performance Evaluation for Synchronous and Asynchronous Coded C-V-BLAST Massive MIMO NOMA System*
Khawla Alnajjar (University of Sharjah, United Arab Emirates); Mohamed El-Tarhuni (American University of Sharjah, United Arab Emirates)
pp. 147-151

14:24 *Adaptive Cancellation of Transmitter Leakage in Frequency-Division Duplexing Transceivers*
Chin-Liang Wang (National Tsing Hua University, Taiwan); Kuan-Kai Chen (Realtek Semiconductor Corp., Taiwan); Min-Chau Jan (National Tsing Hua University, Taiwan); Yuan-Shuo Chang, Erlang Wang and Ying-Hsi Lin (Realtek Semiconductor Corp., Taiwan)
pp. 152-157

14:42 *Multi-UAVs Communication for Payload Data Link Enhancement under Asynchronous Access*
Yun-Ruei Li and Hsin-Piao Lin (National Taipei University of Technology, Taiwan); Li-Chun Wang (National Chiao Tung University, Taiwan); Abebe Belay (National Taipei University of Technology, Taiwan)
pp. 158-159

Optical Comm. & Photonics 2 TOP ⬆

Room: E

Chair: Prof. Gong-Ru Lin (National Taiwan University, Taiwan)

13:30 *SiC Waveguide Based All-Optical Data Processing*
Gong-Ru Lin (National Taiwan University, Taiwan)
pp. 160-161

14:00 *Development of 400 Gb/s optical transceivers for SMF based datacenter optical interconnect*
San-Liang Lee (National Taiwan University of Science and Technology, Taiwan)
pp. 162-165

14:30 *Manufacturing excellence and future challenges of wireless laser components for 4G/5G optical mobile fronthaul networks*
Jack Jia-Sheng Huang (Advanced Photonics Devices group & Source Photonics, USA)
pp. 166-167

Room: Hallway

Chair: Prof. Chun-Chyuan Chen (National Dong Hwa University, Taiwan)

Bacteria-Inspired Communication Mechanism based on Software-defined Network
Yao-Chung Chang (Natioal Taitung University, Taiwan); Jin-Wei Jhuang and Wei-Xuan Cai (National Taitung University, Taiwan)
pp. 176-178

Evaluating KNN-Skyline Queries in Dynamic Road Networks
Yuan-Ko Huang (National Kaohsiung University of Science and Technology, Taiwan); Chien-Pang Lee (National Kaohsiung University of Science and Technology, Taiwan); Cheng-Yuan Tsai (National Cheng-Kung University, Taiwan)
pp. 197-198

Design and Implementation of A Driving Safety Aided Mechanism
Jun-Ming Xu, Yang-Zhou Lin, Liang-Hong Xie, Liang-Bi Chen and Chao-Tang Yu (Southern Taiwan University of Science and Technology, Taiwan)
pp. 207-208

An Ultra Wide-Band ÷3 Injection-Locked Frequency Divider
Wen Cheng Lai (National Taiwan University of Science and Technology, Taiwan)
pp. 168-171

Quadrature Cross-coupled VCOs Using the Tail Resistor Coupling Technique
Wen Cheng Lai (National Taiwan University of Science and Technology, Taiwan)
pp. 172-175

Indoor Localization Using K-nearest neighbor and Artificial Neural Network Back Propagation Algorithms
Abebe Belay, Hsin-Piao Lin, Yirga Munaye, Lei Yen, Yun-Ruei Li and Getaneh Tarekegn (National Taipei University of Technology, Taiwan)
pp. 205-206

A novel duplex scheme based on Rapid On-Off-Division Using Tent Map
Yuan Luo (Northwestern Polytechnical University, P.R. China); ZuXun Song (Northwestern Poly Technical University, P.R. China); Jiaojiao Dang (Northwestern Polytechnical University, P.R. China)
pp. 179-181

Detection of Uplink NOMA systems using joint SIC and Cyclic FRESH filtering
Jayanta Datta and Hsin-Piao Lin (National Taipei University of Technology, Taiwan)
pp. 192-196

Multi-channel Allocation Algorithm Based on Congestion Avoidance in Wearable Wireless Sensor Network
Lincong Zhang and Siyu Gao (Shenyang Ligong University, P.R. China); Kefeng Wei (Northeastern University, P.R. China); Wenbo Zhang (Shenyang Ligong University, P.R. China); Feng Yongxin (Graduate School, P.R. China)
pp. 182-186

A Robust Demodulation Method Based on Signal Intensity in Wireless Laser Communications
Rugui Yao and Shizhou Pan (Northwestern Polytechnical University, P.R. China); Jun Ma (AVIC Xi?�an Flight Automatic Control Research Institute, P.R. China); Xiaoya Zuo and Pengfei Jiang (Northwestern Polytechnical University, P.R. China)
pp. 187-191

Wireless Comm. & Networks 4 TOP ⬆
Room: A
Chair: Prof. Chih-Lin Hu (National Central University, Taiwan)

15:30 *Data Forwarding with Finite Buffer Capacity in Opportunistic Networks*
Mohd Mir, Chih-Lin Hu and Sheng-Zhi Huang (National Central University, Taiwan)
pp. 209-213

15:48 *Scheduling and Adaptive Resource Allocation on ICIC with Testbed Implementation*
Chien-Hao Lee, Kai-Wen Cheng, Kuang-Hsun Lin and Hung-Yu Wei (National Taiwan University, Taiwan)
pp. 214-219

16:06 *Investigation of the Bandwidth of Resonators for Frequency-Coded Chipless Radio-Frequency Identification Tags*
Tong-Yang Jiang, Fei-Peng Lai and Yen-Sheng Chen (National Taipei University of Technology, Taiwan)
pp. 220-223

16:24 *Energy Efficient Greedy Forwarding based on Residual Energy for Wireless Sensor Networks*
Parmod Singh and Yaw-Chung Chen (National Chiao Tung University, Taiwan)
pp. 224-229

16:42 *Design and Implementation of UAV-enabled Flying Access Points*
Brian Chang, Yu-Chieh Chen, Kuan Hsun Liao, Liu Meng Hsueh, Chon Hou Sio and Li-Chun Wang (National Chiao Tung University, Taiwan)
pp. 59-60

Wireless Comm. & Networks 5 TOP ⬆
Room: C
Chair: Prof. Jen-Jee Chen (National University of Tainan, Taiwan)

15:30 *Integration of Open Source Platform Duckietown and Gesture Recognition as an Interactive Interface for the Museum Robotic Guide*
Feng-Ching Cheng, Zi-Yu Wang and Jen-Jee Chen (National University of Tainan, Taiwan)
pp. 230-234

15:52 *A Load-aware Small-cell Management Mechanism to Support Green Communications in 5G Networks*
You-Chiun Wang (National Sun Yat-Sen University, Taiwan); Kai-Chung Chien (National Sun Yat-sen University, Taiwan)
pp. 240-244

16:15 *Cooperative Reinforcement Learning based Throughput optimization in Energy Harvesting Wireless Sensor Network*
Yin Wu and Kun Yang (Nanjing Forestry University, P.R. China)
pp. 245-250

16:37 *Data Security in Cloud Computing Using AES Under HEROKU Cloud*
Ervin Kusuma Dewi (University of Nusantara PGRI, Indonesia)
pp. 251-255

Wireless Comm. & Networks 6 TOP ⬆

Room: D

Chair: Prof. Po-Hao Chang (National Dong Hwa University, Taiwan)

15:30 *Early Termination Belief Propagation Decoder with Parity Check Matrix for Polar Codes*
Hsin-Fu Yu and Huang-Chang Lee (Chang Gung University, Taiwan); Shih-Kai Lee (Yuan Ze University, Taiwan)
pp. 256-259

15:52 *Weighted Sum-Rate Maximization for Cooperative Multicell Multiuser Massive MIMO Systems based on Discretized Pareto Boundary Approximation*
Imran Akhtar, Lixin Li and Xu Li (Northwestern Polytechnical University, P.R. China); Wei Chen (Tsinghua University, P.R. China); Zhu Han (University of Houston, USA)
pp. 260-264

16:15 *An Improved Pilot Reuse Based Estimation Method for General Channel Environment in FDD Massive MIMO Systems*
Lei Zhou, Jianing Zhao, Yuting Lu, Gang Wang, Xiaohui Bi and Duyang Li (Southeast University, P.R. China)
pp. 265-269

16:37 *Efficient Downlink Channel Reconstruction for FDD Transmission Systems*
Yu Han (Southeast University, P.R. China); Tien-Hao Hsu and Chao-Kai Wen (National Sun Yat-sen University, Taiwan); Kai Kit Wong (University College London, United Kingdom (Great Britain)); Shi Jin (Southeast University, P.R. China)
pp. 235-239

Optical Comm. & Photonics 3 TOP ⬆

Room: E

Chair: Prof. Chia-Chien Wei (National Sun Yat-Sen University, Taiwan)

15:30 *APD-based Delay-Division-Multiplexing OFDM-PONs*
Jhih-Hao Hsu and Min Yu (National Sun Yat-sen University, Taiwan); Chia-Chien Wei (National Sun Yat-Sen University, Taiwan); Chi-Hsiang Lin and Chun-Ting Lin (Institute of Photonic System, National Chiao Tung University, Taiwan); Fumin Liu (Huawei Technologies, Shenzhen, P.R. China); Lei Zhou (Huawei Technologies & Advanced Access Network Research D, P.R. China); Liming Fang (Huawei Technologies, P.R. China)
pp. 270-274

16:00 *43.63-Gbit/s Multiple-User SC-FDMA PON with sub-Nyquist Receiver and PAPR Reduction*
Hao-Hsiang Chang (National Chiao Tung University, Taiwan); Chi-Hsiang Lin (Institute of Photonic System, National Chiao Tung University, Taiwan); Ruei Fang (National Chiao Tung University, Taiwan); Chun-Ting Lin (Institute of Photonic System, National Chiao Tung University, Taiwan); Chia-Chien Wei (National Sun Yat-Sen University, Taiwan); Sien Chi (Yuan Ze University, Taiwan)
pp. 275-279

16:15 *Software-defined Peer-to-Peer File Sharing Architecture for TWDM PON*
I-Shyan Hwang (Yuan-Ze University, Taiwan)
pp. 280-283