

# 2019 IEEE 4th International Conference on Signal and Image Processing (ICSIP 2019)

*With Workshop*

2019 International Conference on Hardware Security and Trust  
(ICHST 2019)

July 19-21, 2019 | Wuxi, China

Conference Venue: Southeast University, Wuxi, China (东南大学无锡分校)

Address: No. 99, Linghu Avenue, Wuxi City, Jiangsu Province, China (中国江苏省无锡市滨湖区菱湖大道 99 号)

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# Welcoming Address

On behalf of the conference committees, we are pleased to welcome you to 2019 IEEE 4th International Conference on Signal and Image Processing (ICSIP 2019) and 2019 International Conference on Hardware Security and Trust (ICHST 2019), which will be held in Wuxi, China, during July 19-21, 2019, hosted by Southeast University in Wuxi, China.

ICSIP was held successfully in North China of Technology, Beijing, China in 2016, Nanyang Technological University, Singapore in 2017, and Shenzhen, China (hosted by Shenzhen Research Institute, Southeast University, China) in 2018.

ICSIP 2019 is aimed to bring together the researchers, experts, and scholars from Asian Pacific nations, North America, Europe and around the world to exchange their research results and address open issues in signal and image processing. It is one of the leading international conferences for presenting novel and fundamental advances in the fields of signal and image processing.

ICHST 2019 is an annual symposium which aims to facilitate the rapid growth of hardware-based security research and development. Rapid proliferation of computing and communication systems with increasing computational power and connectivity into every sphere of modern life has brought security to the forefront of system design, test, and validation processes. It highlights new results in the area of hardware and system security. Relevant research topics include techniques, tools, design/test methods, architectures, circuits, and applications of secure hardware.

2019 Wuxi Conferences will be composed of 18 oral sessions, 1 poster session, 4 Keynote Speeches delivered respectively by IEEE Fellow, Prof. David Zhang, Chinese University of Hong Kong (Shenzhen), China; Fellow of IEEE, Prof. Lap-Pui Chau, Nanyang Technological University, Singapore; Fellow of IEEE, Prof. Lingyang Song, Peking University, Beijing, China; Assoc. Prof. Linning Peng, Southeast University, China; 1 Plenary Speech, given by Assoc. Prof. Linning Peng, Southeast University, China and 1 Invited Speech given by Assoc. Prof. Benezeth Yannick, Univ. Bourgogne Franche-Comté, France.

Finally, we would like say thank you to all of our conference committees for always being supportive to the conferences, our participants, for coming to Wuxi during your busy schedule to share your knowledge with us. We hope our conferences will prove to be intellectually stimulating to you as to us.

Hope you will enjoy the conferences, the food, the hospitality, and the beautiful and charming environment of Wuxi!

**Conference Organizing Committees  
Wuxi, China**

# Conference Committees

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Principle Scientist (Adj), Singapore National Eye Research Institute, Singapore

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Dr. Le Nguyen Quoc Khanh, Nanyang Technological University, Singapore  
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Prof. Ghasem Mirjalily, Yazd University, Iran & Shenzhen Research Institute of Big Data, China  
Prof. Bryan Riley, Ohio University, USA  
Assoc. Prof. Qian Huang, Hohai University, China  
Dr. Songting Li, National University of Defense Technology, China  
Dr. Qing Li, Donghua University, China  
Assoc. Prof. Tammam Tillo, Free University of Bozen-Bolzano, Italy  
Assoc. Prof. Yannick Benezeth, Univ. Bourgogne Franche-Comté, France  
Dr. Yuanhao Gong, Computer Vision Lab, ETHZ, Switzerland  
Dr. Joanna Slawinska, University of Wisconsin-Milwaukee, USA  
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Prof. Maria Rona Perez, FEU Institute of Technology, Philippines  
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Dr. Leon Smalov, Coventry University, UK  
Dr. Sergei P. Skorobogatov, University of Cambridge, UK  
Dr. Abeer Hamdy, British University in Egypt, Egypt  
Asst. Prof. Priteshkumar Prajapati, Chandubhai S. Patel Institute of Technology, India

Asst. Prof. Ankur Singh Bist, KIET, Ghaziabad, India

Dr. Shuai Zhao, Big Switch Networks Inc, USA

Asst. Prof. Bhupendra Gupta, Indian Institute of Information Technology Disgn and Manufactruing  
Jabalpur, India

Dr. Vinaya Gohokar, MIT-WPU, India

# Instructions

## Registration Guide:

Arrive at the Conference Venue→Inform the conference staff of your paper ID→Sign your name on the Participants List→Check your conference materials.

## Checklist:

1 receipt, 1 name tag, 1 printed conference abstract, 1 lunch coupon, 1 dinner coupon, 1 computer bag, 1 USB stick (paper collection).

## Devices Provided by the Conference Organizers:

Laptops (with MS-Office & Adobe Reader)

Projectors & Screen

Laser Sticks

## Materials Provided by the Presenters:

PowerPoint or PDF files

## Duration of Each Presentation:

Regular Oral Session: 15 minutes of presentation including 2-3 minutes of Q&A

## Notice:

\*Certificate of Listener can be collected in the registration counter.

\*Certificate of Presentation can be collected from the session chair after each session.

\*The organizer will not provide accommodation, so we suggest you make an early reservation.

\*One best presentation will be selected from each session. The best one will be announced when each session ends and will be awarded by the session chair after each session in the meeting room.

## Contact Us:

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Website: <http://www.ichst.org/>



# Venue & Hotel Recommendations

Southeast University, Wuxi, China (东南大学无锡分校)

Address: No. 99, Linghu Avenue, Wuxi City, Jiangsu Province, China

(地址：中国江苏省无锡市滨湖区菱湖大道 99 号)



## Recommended Economic Hotels 周边经济型酒店推荐:

Accommodation can be booked either through the hotel's official website or through the many hotel reservation sites such Trip.com, Booking.com, Agoda, etc. (请参会人员通过携程等平台提前预定房间.)

### 1. Pullman Wuxi New Lake/无锡新湖铂尔曼大酒店

地址: 无锡 滨湖区 和风路 30 号(新区管委会旁边), 近太湖国际科技园

### 2. Vienna International Hotel (Wuxi Taihu Expo Center)/维也纳国际酒店(无锡太湖博览中心店)

地址: 无锡 滨湖区 瑞景道 199 号 A 幢 1 层、17 层至 23 层

### 3. Hanting Hotel 汉庭酒店(无锡太湖国际科技园店)

地址: 无锡 菱湖大道 99 号桃园 1 号楼, 东南大学校园内

### 4. Veegle Sincere Hotel Wuxi/无锡协信维嘉酒店

地址: 无锡 滨湖区 和风路 19 号星光商业中心 1 号

# Agenda Overview

## FRIDAY, JULY 19

TIME	ACTIVITY	VENUE
9:00-17:00	Registration & Conference Kits Collection	前工院 104 室 Qiangong-Yuan Room 104

## SATURDAY, JULY 20 | 09:00-12:10

TIME	ACTIVITY	VENUE
09:00-09:05	<b>Opening Remarks</b> Prof. Akinori Ito, Tohoku University, Japan	致知堂 101 室 Zhizhi-Tang Room 101
<b>09:05-12:10</b>	<b>Keynote Speeches</b>	
09:05-09:45	<b>Keynote Speech I</b> <b>Biometrics Authentication: Research and Development</b> Fellow of IEEE and IAPR, Prof. David Zhang, Chinese University of Hong Kong (Shenzhen), China	致知堂 101 室
09:45-10:25	<b>Keynote Speech II</b> <b>Can Deep Learning Learn to Count? on cognitive deficit of the current state of deep learning</b> Fellow of IEEE, Prof. Xiaolin Wu, McMaster University, Canada	Zhizhi-Tang Room 101
10:25-10:50	<b>Coffee Break</b>	
10:50-11:30	<b>Keynote Speech III</b> <b>Recent Development in Data Analytics for Intelligent Transportation Systems</b> Fellow of IEEE, Prof. Lap-Pui Chau, Nanyang Technological University, Singapore	致知堂 101 室
11:30-12:10	<b>Keynote Speech IV</b> <b>Intelligent Ocular Imaging Research and IMED Team latest research update 2019</b> Prof. Jimmy Liu, Southern University of Science and Technology, China Principle Scientist (Adj), Singapore National Eye Research Institute, Singapore	Zhizhi-Tang Room 101

12:10-12:20	<b>Group Photo</b>
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12:20-13:30	<b>Lunch at Tao Yuan Cafeteria(桃园餐厅)</b>
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## SATURDAY, JULY 20 | 13:30-16:15 (2h45mins)

### Parallel Sessions

Session#	Session Title	Venue
S01	Communication System I <i>(One Plenary Speech included)</i>	致知堂 101 室 Zhizhi-Tang Room 101
S02	Pattern Recognition and Classification I <i>(One Invited Speech included)</i>	致知堂 102 室 Zhizhi-Tang Room 102
S03	Pattern Recognition and Classification II	致知堂 104 室 Zhizhi-Tang Room 104
S04	Computer Applications	前工院 104 室 Qiangong-Yuan Room 104
S05	Image Processing I	前工院 105 室 Qiangong-Yuan Room 105
S06	Objective Detection I	前工院 106 室 Qiangong-Yuan Room 106
S07	Image Processing II	前工院 107 室 Qiangong-Yuan Room 107
/	Poster Session	Lobby 1F

16:15-16:30	<b>Coffee Break</b>
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## SATURDAY, JULY 20 | 16:30-19:00 (2h30mins)

### Parallel Sessions

Session#	Session Title	Venue
S08	Computer Science I	致知堂 101 室 Zhizhi-Tang Room 101
S09	Objective Detection II	致知堂 102 室 Zhizhi-Tang Room 102
S10	Image Processing III	致知堂 104 室 Zhizhi-Tang Room 104
S11	Image Processing IV	前工院 104 室 Qiangong-Yuan Room 104

S12	Communication System II	前工院 105 室 Qiangong-Yuan Room 105
S13	Communication System III	前工院 106 室 Qiangong-Yuan Room 106
S14	Signal Processing	前工院 107 室 Qiangong-Yuan Room 107

19:00-20:00 **Dinner at Tao Yuan Cafeteria(桃园餐厅)**

**SUNDAY, JULY 21 | 09:00-11:45 (2h45mins)**  
**Parallel Sessions**

Session#	Session Title	Venue
S15	Computer Vision	前工院 104 室 Qiangong-Yuan Room 104
S16	Computer Science II	前工院 105 室 Qiangong-Yuan Room 105
S17	Image Processing V	前工院 106 室 Qiangong-Yuan Room 106
S18	Pattern Recognition and Classification III	前工院 107 室 Qiangong-Yuan Room 107

11:45-12:45 **Lunch at Tao Yuan Cafeteria(桃园餐厅)**

# Introduction of Speakers



**Fellow of IEEE and IAPR, Prof. David Zhang, Chinese University of Hong Kong (Shenzhen), China**

**Speech Title: Biometrics Authentication: Research and Development**

**Abstract:** In recent times, an increasing, worldwide effort has been devoted to the development of automatic personal identification systems that can be effective in a wide variety of security contexts. As one of the most powerful and reliable means of personal authentication, biometrics has been an area of particular interest. It has led to the extensive study of biometric technologies and the development of numerous algorithms, applications, and systems. This presentation will systematically explain this new research trend. As case studies, a new biometrics technology (palmprint recognition) and two new biometrics applications (medical biometrics and aesthetical biometrics) are introduced. Some useful achievements could be given to illustrate their effectiveness.

**BIO:** David Zhang graduated in Computer Science from Peking University. He received his MSc in 1982 and his PhD in 1985 in both Computer Science from the Harbin Institute of Technology (HIT), respectively. From 1986 to 1988 he was a Postdoctoral Fellow at Tsinghua University and then an Associate Professor at the Academia Sinica, Beijing. In 1994 he received his second PhD in Electrical and Computer Engineering from the University of Waterloo, Ontario, Canada. He has been a Chair Professor at the Hong Kong Polytechnic University where he is the Founding Director of Biometrics Research Centre (UGC/CRC) supported by the Hong Kong SAR Government since 2005. Currently he is Presidential Chair Professor in Chinese University of Hong Kong (Shenzhen). He also serves as Visiting Chair Professor in Tsinghua University and HIT, and Adjunct Professor in Shanghai Jiao Tong University, Peking University, National University of Defense Technology and the University of Waterloo. He is both Founder and Editor-in-Chief, International Journal of Image & Graphics (IJIG) (<http://www.worldscinet.com/ijig/ijig.shtml>) and Springer International Series on Biometrics (KISB) (<http://www.springer.com/series/6191>); Organizer, the first International Conference on Biometrics Authentication (ICBA); and Associate Editor of more than ten international journals including IEEE Transactions and so on. Over past 30 years, he has been working on pattern recognition, image processing and biometrics, where many research results have been awarded and some created directions, including palmprint recognition, computerized TCM and facial beauty analysis, are famous in the world. So far, he has published over 20 monographs, 400 international journal papers and 40 patents from USA/Japan/HK/China.

He is also ranked about 80 with H-Index 107 at Top 1000 Scientists for international Computer Science and Electronics (<http://www.guide2research.com/scientists>). Professor Zhang is a Croucher Senior Research Fellow, Distinguished Speaker of the IEEE Computer Society, and a Fellow of both IEEE and IAPR.



**Fellow of IEEE, Prof. Xiaolin Wu, McMaster University, Canada**

**Speech Title: Can Deep Learning Learn to Count? on cognitive deficit of the current state of deep learning**

**Abstract:** Subitizing, or the sense of small natural numbers, is an innate cognitive function of humans and primates; it responds to visual stimuli prior to the development of any symbolic skills, language or arithmetic. Given successes of deep learning (DL) in tasks of visual intelligence and given the primitivity of number sense, a tantalizing question is whether DL can comprehend numbers and perform subitizing. But somewhat disappointingly, extensive experiments of the type of cognitive psychology demonstrate that the examples driven black box DL cannot see through superficial variations in visual representations and distill the abstract notion of natural number, a task that children perform with high accuracy and confidence. The failure is apparently due to the learning method not the connectionist CNN machinery itself. A recurrent neural network capable of subitizing does exist, which we construct by encoding a mechanism of mathematical morphology into the CNN convolutional kernels. Also, we investigate, using subitizing as a test bed, the ways to aid the black box DL by cognitive priors derived from human insight. Our findings are mixed and interesting, pointing to both cognitive deficit of pure DL, and some measured successes of boosting DL by predetermined cognitive implements. This case study of DL in cognitive computing is meaningful as visual numerosity represents a minimum level of human intelligence.

**BIO:** Xiaolin Wu, Ph.D. in computer science, University of Calgary, Canada, 1988. Dr. Wu started his academic career in 1988, and has since been on the faculty of Western University, New York Polytechnic University (NYU Poly), and currently McMaster University. He holds the NSERC senior industrial research chair in Digital Cinema. His research interests include image processing, computer vision multimedia signal coding and communication, joint source-channel coding, multiple description coding, and network-aware visual communication. He has published over two hundred-sixty research papers and holds five patents in these fields. Dr. Wu is an IEEE fellow, McMaster Distinguished Engineering Professor, an associated editor of IEEE Transactions on Image Processing, and served on the technical committees of many IEEE international conferences/workshops. Dr. Wu received numerous international awards and honors.



**Fellow of IEEE, Prof. Lap-Pui Chau, Nanyang Technological University, Singapore**

**Speech Title: Recent Development in Data Analytics for Intelligent Transportation Systems**

**Abstract:** Data analytics becomes a research focus in intelligent transportation systems (ITS), which can be seen in many projects around the world. Intelligent transportation systems will generate a large amount of data. These data will have deep impacts on the application of smart cities and transportation systems, which makes transportation system safer, more efficient, and greater user satisfaction. Various sensors are used to achieve these tasks. The sensors can broadly classify into two categories, i.e. road side sensors and in-vehicle devices. Based on the individual sensor and the combination of roadside sensors and in-vehicle devices, we will discuss the technologies used for various new applications.

**BIO:** Lap-Pui Chau received the Ph.D. degree from The Hong Kong Polytechnic University in 1997. He is now with School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore. His research interests include robotic vision, and video analytics for intelligent transportation system. He was the chair of Technical Committee on Circuits & Systems for Communications of IEEE Circuits and Systems Society from 2010 to 2012. He served as associate editors for five IEEE journals. Besides, he was an IEEE Distinguished Lecturer for 2009-2016 and he is an IEEE Fellow.



**Prof. Jimmy Liu, Southern University of Science and Technology, China**

**Principle Scientist (Adj), Singapore National Eye Research Institute, Singapore**

**Speech Title: Intelligent Ocular Imaging Research and IMED Team latest research update 2019**

**Abstract:** In the talk, Jimmy will update the ocular imaging research work in the past years. He will share his AI-based eye image processing work on various ocular imaging modalities. He will cover the following 4 areas conducted in IMED Team (Singapore, Ningbo and Shenzhen): ocular disease screening, robot assisted eye micro-surgery, ocular biometrics, as well as ocular medical informatics using genome study. He will introduce the current issues, technologies and approaches in this interdisciplinary research area, and introduce his latest research work in 2018/2019 in details.

**BIO:** Jimmy Liu graduated from the Department of Computer Science of the University of Science and Technology of China in 1988. He further obtained his master and doctoral degrees in Computer Science from the National University of Singapore. In 2004, he started the Intelligent Medical Imaging Research Team (iMED Singapore, A\*STAR) and grew it to become one of the world's largest ophthalmic medical image processing team, focusing on ophthalmic Artificial Intelligence research. Jimmy was the chairman of the IEEE Singapore Biomedical Engineering Society in Singapore.

In March 2016, Jimmy returned to China and founded the iMED China (Ningbo) team. He was the founding director and senior professor of the Cixi Institute of Biomedical Engineering (CIBE) of the Chinese Academy of Sciences.

In February 2019, he joined the Department of Computer Science and Engineering of the Southern University of Science and Technology to establish iMED China (Shenzhen) . He will devote his time to more fundamental eye-brain, Artificial Intelligence, precision medicine, surgical robotics research.





**Assoc. Prof. Linning Peng, Southeast University, China**

**Speech Title: Radio Frequency Fingerprint Identification in Physical Layer Security**

**Abstract:** Radio frequency (RF) fingerprint is the inherent hardware characteristics and has been employed to classify and identify wireless devices in wireless communications. This talk will cover our recent RF fingerprint identification research. We first review RF fingerprint identification technique. We then propose our practical studies with results collected from software defined radio (SDR) experimental platform. We have carried out a comprehensive investigation on RF fingerprint identifications, i.e., RF feature extraction, deep learning based classification, and signal preprocessing, in a number of experiments in different wireless communication systems such as WiFi, Zigbee, GSM and LoRa. We will conclude the talk by suggestions for the remaining research challenges in RF fingerprint identification area.

**BIO:** Linning PENG received his PhD degrees from IETR (Electronics and Telecommunications Institute of Rennes) laboratory at INSA (National Institute of Applied Sciences) of Rennes, France, in 2014. From 2014, he has been a research associate with School of Cyber Science and Engineering, Southeast University, China. His research interests include Internet of Things, software defined radios and physical layer security in wired and wireless communications. He has published more than 10 SCI journal papers and 20 EI conference papers. He has also applied more than 10 patents in physical layer security.



**Assoc. Prof. Yannick Benezeth, University Bourgogne Franche-Comte, France**

**Speech Title: Emotional State Classification using Pulse Rate Variability**

**Abstract:** Humans are continually exposed to emotional stimuli. Gesture, voice intonation, and facial expressions are among the most popular cues that describe our changing emotions. However, the physiological systems that govern our bodily functions are also impacted by the different emotions that we feel. One particular physiological phenomenon has turned out to be an excellent indicator of the autonomic function. It is the spontaneous fluctuations in the heart rhythms, which can be described by the pulse rate variability (PRV). In this work, the PRV is obtained using remote photoplethysmography with an advanced interbeat interval detection method based on the slope sum function. We prove that from a simple RGB camera, it is possible to assess the emotional state of a person by analysing their pulse rate variations. This optimistic finding is supported by surprising results and an accuracy rate of around 60% on the CAS(ME)2 dataset. This is the first study to propose an emotion classification based on a physiological signal analysis using CAS(ME)2.

**BIO:** Yannick Benezeth is an associate professor at the Univ. Bourgogne Franche-Comté (France). He obtained his Ph.D. in computer science from the Univ. of Orléans in 2009. He also received the engineering degree from the ENSI de Bourges and the MS degree from the University of Versailles-Saint-Quentin-en-Yvelines in 2006. He also worked as a research fellow at the Orange labs and INRIA (Rennes – France) between 2009 and 2011. He has co-supervised or is supervising 8 Ph.D. students since 2011. He was a reviewer of significant scientific journals (IEEE Trans. on Image Processing, IEEE Trans. on Circuits and Systems for Video Technology, Pattern Recognition letters, ...) and international conferences. He was visiting researcher of Univ. de Sherbrooke (Canada), NECTEC (Thailand), Univ. Magdeburg (Germany) and Boston University (USA). He participated in several French or international projects in the field of computer vision (CNRS, ANR, PHC, etc.).

His research interests include biomedical engineering, image processing, and video analytics. Application areas include video health monitoring and endoscopy. Since 2009, he has published 17 international journals and 40 international conferences and patents. His papers have been cited more than 1900 times, according to Google Scholar.

## SATURDAY, JULY 20 | 13:30-16:15 (2h45mins)

### Parallel Sessions

#### S01- Communication System I

Session Chair: Prof. Lei Cao, University of Mississippi, USA

Venue: Zhizhi-Tang Room 101 (致知堂 101 室)

Time	Paper ID	Title & Presenters
13:30-14:00	Plenary Speech	<b>Radio Frequency Fingerprint Identification in Physical Layer Security</b> <i>Assoc. Prof. Linning Peng, Southeast University, China</i>
14:00-14:15	DP147	Markov Chain based Performance Analysis of LAA and WiFi Coexistence in Dual Carrier Aggregation Lei Cao, University of Mississippi, USA
14:15-14:30	DP019	Spatial estimation metric of Sensor Array: From the Information Theory Framework <i>Xiao Yan, Nanjing University of Aeronautics and Astronautics, China</i>
14:30-14:45	DP024	MIMO Radar Transceiver Joint Optimization using Pre-Information of Forward-Squint-Looking GMTI <i>Zhoudan Lv, National University of Defense Technology, China</i>
14:45-15:00	DP031	DOA Estimation for Massive MIMO System via Low-Complexity Trilinear Decomposition Method <i>Wajih Ul Hassan, Nanjing University of Aeronautics and Astronautics (NUAA), China</i>
15:00-15:15	DP042	Implementation of Digital Lock-in Amplifier Based on High-level Synthesis <i>Kan Huang, Sun Yat-Sen University, China</i>
15:15-15:30	DP052	Design and Implementation of an Efficient Modified CORDIC Algorithm <i>Yuan Xue, University of Chinese Academy of Sciences, China</i>
15:30-15:45	DP063	The Space-time Adaptive Processing Method in airborne MIMO radar with Nested Structure <i>Yan Zhou, Northwest University, China</i>
15:45-16:00	DP065	Dynamic Time-slot Allocation Algorithm Based on Environment Sensing in Wireless Sensor Network <i>Kang Cao, Wuhan University of Technology, China</i>
16:00-16:15	DP112	Velocity Estimation of Moving Targets in Multi-Channel SAR via an Amplitude-Based Weighted Average of Multiple Pixels <i>Yahua Ren, Shanghai Jiao Tong University, China</i>

## S02- Pattern Recognition and Classification I

Session Chair: Dr. Yuan Yuan, Wuhan University, China

Venue: Zhizhi-Tang Room 102 (致知堂 102 室)

Time	Paper ID	Title & Presenters
13:30-13:50	Invited Speech	<b>Emotional State Classification using Pulse Rate Variability</b> <i>Assoc. Prof. Benezeth Yannick, Univ. Bourgogne Franche-Comté, France</i>
13:50-14:05	DP201	Color image quality assessment with multi deep convolutional networks <i>Yuan Yuan, Wuhan University, China</i>
14:05-14:20	DP192	The Hyperspectral image clustering based on Spatial Information and Spectral Clustering <i>Yiwei Wei, Rocket Force University of Engineering, China</i>
14:20-14:35	DP215	CNN-Based Broad Learning System <i>Ting Li, Chongqing University, China</i>
14:35-14:50	DP223	A Robust Chinese License Plate Detection and Recognition System in Natural Scenes <i>Yuxin Zhang, Beijing University of Posts and Telecommunications, China</i>
14:50-15:05	DP230	Automatic Isolated Arabic Speech Recognition and Its Transformation into Signs <i>Ozof Alharbi, Effat University, KSA</i>
15:05-15:20	DP249	Radar Emitter Sorting and Recognition Based on Time-frequency Image Union Feature <i>Wang Gongming, PLA Strategic Support Force Information Engineering University, China</i>
15:20-15:35	DP266	Deep Representation Learning With Feature Augmentation for Face Recognition <i>Jie Sun, Southeast University, China</i>
15:35-15:50	DP506	Classification of remote sensing scenes based on Neural Architecture Search Network <i>Lingling Li, China University of Geosciences, China</i>
15:50-16:05	DP507	Segmentation of Dwarf Rocks Based on Bayesian Hierarchical Mixture Model <i>Yunxin Liang, Guangzhou Maritime University, China</i>

### S03- Pattern Recognition and Classification II

Session Chair: Prof. Li Tan, Beijing Technology and Business University, China

Venue: Zhizhi-Tang Room 104 (致知堂 104 室)

Time	Paper ID	Title & Presenters
13:30-13:45	DP109	Blurring Scene Recognition in Short Video <i>Li Tan, Beijing Technology and Business University, China</i>
13:45-14:00	DP049	Chronological Classification of ancient paintings of Mogao Grottoes using Convolutional Neural Networks <i>Yi Gong, Southern University of Science and Technology, China</i>
14:00-14:15	DP069	Cepstral Derivatives in MFCCs for Emotion Recognition <i>Thayabaran Kathiresan, University of Zurich, Switzerland</i>
14:15-14:30	DP092	DOA and Polarization Estimation with Reduced-dimensional MUSIC Algorithm for L-shaped Electromagnetic Vector Sensor Array <i>Zhu Beizuo, Nanjing University of Aeronautics and Astronautics, China</i>
14:30-14:45	DP108	A Radar Signal Recognition Method Based on Fisher Discrimination Dictionary Learning <i>Jiaxun Chen, Air Force Early Warning Academy, China</i>
14:45-15:00	DP133	Transfer Learning in Polytime Codes Signal Recognition <i>Lu Gao, National Key Laboratory of Science and Technology on Test Physics and Numerical Mathematics, Beijing Institute of Space Long March Vehicle, Beijing, China</i>
15:00-15:15	DP136	Research on Vehicle Type Classification Method Based on Fusion Features <i>Liru Hua, Southeast University, China</i>
15:15-15:30	DP146	Robust dynamic classifier selection for remote sensing image classification <i>Meizhu Li, Ghent University, Belgium</i>
15:30-15:45	DP174	Human Activity Classification with Multi-frequency Spectrogram Fusion and Deep Learning <i>Gang Wang, Chengdu University of Technology, China</i>
15:45-16:00	DP182	Acoustic Scene Recognition Based on Convolutional Neural Networks <i>Liu Hao, Harbin Institute of Technology, ShenZhen, China</i>

## S04- Computer Applications

Session Chair: Dr. Chau Kien Tsong, Universiti Sains Malaysia, Malaysia

Venue: Qiangong-Yuan Room 104 (前工院 104 室)

Time	Paper ID	Title & Presenters
13:30-13:45	DP282	Extending Physical Multimedia Learning with Cognitive Theory of Multimedia Learning <i>Chau Kien Tsong, Universiti Sains Malaysia, Malaysia</i>
13:45-14:00	DP504	Bi-Fuzzy Clustering Algorithm by Augmented Granula <i>Weike Nie, Northwest University, China</i>
14:00-14:15	DP185	A Low Latency Floating Point CORDIC Algorithm for Sin/Cosine Function <i>Liu Hao, Harbin Institute of Technology, ShenZhen, China</i>
14:15-14:30	DP045	Inversion of SiO <sub>2</sub> Content in Surface Rock by Thermal Infrared Remote Sensing <i>Changbao Yang, Jilin University, China</i>
14:30-14:45	DP103	Signal Processing for Circular-track Ringmap SAR equipped on Multi-rotors UAV <i>Danqi Li, Nanjing University of Aeronautics &amp; Astronautics, China</i>
14:45-15:00	DP126	Automatic Reconstruction of Cross-cut Chinese Document Shreds Based on the Feature of Typesetting and Strokes <i>Yunqiong Wang, Yunnan Normal University, China</i>
15:00-15:15	DP138	Skeleton Extraction Algorithm Based on Partial Intrinsic Symmetry <i>Fangjun Yi, Central South University, China</i>
15:15-15:30	DP181	Road-Map Assisted Adaptive Constant Turn Model <i>Haojie Yu, Beijing Institute of Technology, China</i>
15:30-15:45	DP034	Liver Segmentation in CT based on ResUNet with 3D Probabilistic and Geometric Post Process <i>Hong Liu, Institute of Computing Technology, Chinese Academy of Sciences, Beijing, China</i>
15:45-16:00	DP194	Influence Analysis of Atmospheric Refraction on TDOA and FDOA Dual-station Location Error of Air-to-ground and Its Correction <i>Shuqiang Zhang, National University of Defense Technology, China</i>

## S05- Image Processing I

Session Chair: Dr. Suphongsakhetkeeree, Mahanakorn University of Technology, Thailand

Venue: Qiangong-Yuan Room 105 (前工院 105 室)

Time	Paper ID	Title & Presenters
13:30-13:45	DP158	Image restoration using optimized Weiner filtering based on modified Tikhonov regularization <i>Suphongsakhetkeeree, Mahanakorn University of Technology, Thailand</i>
13:45-14:00	DP075	A Dual-Link Residual Convolution Neural Network for Image Super-Resolution <i>Xiaojie Duan, Liaoning University, China</i>
14:00-14:15	DP076	Fast sub-pixel prediction based on error surface fitting for HEVC <i>Lei Cheng, Peking University, China</i>
14:15-14:30	DP079	An Automatic Nuclei Cells Counting Approach Using Effective Image Processing Methods <i>Abdu Gumaei, King Saud University, Saudi Arabia</i>
14:30-14:45	DP080	Mitigating EM Edge Artifacts Using TV Null-Space Smoothing <i>Bruce D Smith, University of Texas at San Antonio, USA</i>
14:45-15:00	DP081	SAR image change detection based on Generalized Gaussian Distribution MRF model <i>Zhang Gang, Xidian University, China</i>
15:00-15:15	DP060	Digital Image Design Research of Popular Culture Exhibition <i>Chen Yan-Jie, Chaoyang University of Technology, Taiwan</i>
15:15-15:30	DP096	Speckle Noise Removal for SAR image based on G0 Distribution Combining Total Variation and Total Curvature <i>Yunping Mu, Qingdao University, China</i>
15:30-15:45	DP107	An Enhanced V-BM3D Algorithm for VideoSAR Denoising Combined with Temporal Information <i>Zihan Li, National University of Defense Technology, China</i>
15:45-16:00	DP168	Image-enhanced Adaptive Learning Rate Handwritten Vision Processing Algorithm Based on CNN <i>Meng Meng, Southeast University, China</i>

**S06- Objective Detection I****Session Chair: Assoc. Prof. Zelong Wang, National University of Defense Technology, China****Venue: Qiangong-Yuan Room 106 (前工院 106 室)**

<b>Time</b>	<b>Paper ID</b>	<b>Title &amp; Presenters</b>
13:30-13:45	DP251	Local Low-rank Approach for Despeckling of Ocean Internal Wave on SAR Imaged <i>Zelong Wang, National University of Defense Technology, China</i>
13:45-14:00	DP035	A high-accuracy target tracking method and its application in acoustic engineering <i>Fan Yin, University of Chinese Academy of Sciences, Beijing, China</i>
14:00-14:15	DP164	Matrix Information Geometry for Passive Sonar Signal Detection in a Non-Stationary Environment <i>Yang Zeng, National University of Defense Technology, China</i>
14:15-14:30	DP178	CFAR Analysis of Non-Coherent Detectors in Compound-Gaussian Clutter with Inverse Gaussian Texture <i>Jian Xue, Xidian University, China</i>
14:30-14:45	DP184	Low PRF Low Frequency Radar Sensor for Fall Detection by Using Deep Learning <i>Liang Shen, National University of Defense Technology, China</i>
14:45-15:00	DP186	A novel approach for marine small target detection based on deep learning <i>Meiyan, Nanjing Research Institute of Electronics Technology, China/Key Laboratory of IntelliSense Technology, CETC, China</i>
15:00-15:15	DP208	An Improved D-CNN Based YOLOv3 for Pedestrian Detection <i>Faizan Ahmad, Nanjing University of Aeronautics and Astronautics, China</i>
15:15-15:30	DP227	A Vehicle Movement Based Self-Organized Solar Powered Street Lighting <i>Wed Mohammed Alzahrani, Effat University, KSA</i>
15:30-15:45	DP255	Small Boat Detection via Time-Frequency Analysis and DenseNet <i>Guanqing Li, National University of Defense Technology, China</i>
15:45-16:00	DP132	Deviation Analysis for Approximate Maximum Likelihood Localization Algorithms <i>Jiang Ling, Southeast University, China</i>



## S07- Image Processing II

Session Chair: Dr. Peixian Zhuang, Nanjing University of Information Science & Technology, China

Venue: Qiangong-Yuan Room 107 (前工院 107 室)

Time	Paper ID	Title & Presenters
13:30-13:45	DP189	Pan-Sharpener with a Gradient Domain Guided Image Filtering Prior <i>Peixian Zhuang, Nanjing University of Information Science &amp; Technology, China</i>
13:45-14:00	DP238	Automatic Classification of Spider Images in Natural Background <i>YANG Jian, Dali University, China</i>
14:00-14:15	DP213	A Novel Block Image Encryption Algorithm Based on DNA Dynamic Encoding and Chaotic System <i>Xue Li, Anhui University, China</i>
14:15-14:30	DP214	Study on Super-Resolution of Images Obtained by Micro Satellite with CMOS Sensor <i>Xu Jun, DFH Satellite Co., Ltd, China</i>
14:30-14:45	DP217	Artifact Suppression for Passive Cavitation Imaging using U-Net CNNs with Uncertainty Quantification <i>Yushi Liu, Tufts University, USA</i>
14:45-15:00	DP220	Cell Counting Algorithm Based on YOLOv3 and Image Density Estimation <i>Pengfei Zhang, Tongji University, China</i>
15:00-15:15	DP240	Image Segmentation Method Based on Spiking Neural Network with Adaptive Synaptic Weights <i>Donghao Zheng, Northwest Normal University, China</i>
15:15-15:30	DP250	Classification Research Based on Residual Network for Hyperspectral Image <i>Yue Meng, Qingdao University of Science and Technology, China</i>
15:30-15:45	DP256	A mobile phone screen cover glass defect detection model based on small samples learning <i>Yongfa Lv, Zhengzhou University, China</i>
15:45-16:00	DP234	Slab rotation angles intelligent detection method based on perspective transformation and boundary fixed point algorithm <i>Xin Yue, Northeastern University, China</i>

**Poster Session****Time: 13:30-16:00****Venue: Lobby 1F**

<b>Paper ID</b>	<b>Title &amp; Presenters</b>
DP501	Classification of Chopped Strand Mat Defects Based on CSMNet <i>Dong Zhuo, Jun-Feng Jing, Min Zheng, Jun-Yang Zhang</i> Xi'an Polytechnic University, China
DP002	A General Framework for High-Speed Network Traffic Processing <i>Guo Haoran, Li Haiyan, Hao Liyun</i> Beijing Space Information Relay Transmission Technology Research Center, China
DP006	A Power-aware Scheduling Algorithm in Multi-tenant IaaS Clouds <i>Bin Liang, Xiaoshe Dong and Xingjun Zhang</i> Xi'an Jiaotong University, China
DP032	Research on Monocular Vision Distance Measurement Algorithm Based on Reference Target <i>Zhengguang Xu, Zhaohui Zhou and Luyao Wang</i> University of Science and Technology Beijing, China
DP041	Depression Angle Invariant SAR Target Recognition via Feature Transform <i>Ke Wang, Gong Zhang</i> Nanjing University of Aeronautics and Astronautics, China
DP044	Research on Muscle Fatigue Trend via Nonlinear Dynamic Feature Analysis of Mechanomyography Signal <i>Wendu Jiang, Chunming Xia, Yue Zhang, Jiazhi Xie and Wanjun Feng</i> East China University of Science and Technology, China
DP085	A Novel Compression Method based on Bandlet and Compressive Sensing for Ultrasound Image <i>Qiong Zhang, Bin Li, Minfen Shen</i> Shantou University Medical College, China
DP102	Quadratic Discriminant Analysis Based on Graphical Lasso for Activity Recognition <i>WANG Jinjia, Ji Shaonan, ZHOU Yaqian</i> Yanshan University, China
DP110	Research on Satellite Signal Vector Tracking Based on Prefilter under High Dynamic Conditions <i>Zhiyong Tu, Tiejun Lu, Bo Bi</i> Beijing Microelectronics Technology Institute, China

Paper ID	Title & Presenters
DP113	Regularized Nonnegative Matrix Factorization with Real Data for Hyperspectral Unmixing <i>Li Sun, Wei Feng, Jing Wang</i> Shandong Agricultural University, China
DP116	Recovery of Undersampled Signals Based on Compressed Sensing <i>Weibo Deng, Maihu Jiang, Yingning Dong</i> Harbin Institute of Technology, China
DP117	Image denoising based on wavelet transform and BM3D algorithm <i>Qinning Su, Yong Wang, Yiyao Li, Chengyan Zhang, Ping Lang and Xiongjun Fu</i> Electronics Beijing Institute of Technology Beijing, China
DP118	Study on anti-time-delay repeater jamming of sea surface spatial position constrained method <i>Jingfang Yang, Xiongjun Fu, Chengyan Zhang, Xianhan Yin, Peiyu Cong, Shunqi Su</i> Electronics Beijing Institute of Technology Beijing, China
DP119	Spotlight SAR image recognition based on dual-channel feature map convolutional neural network <i>Junjie Liu, Xiongjun Fu, Kaiqiang Liu, Miao Wang, Chengyan Zhang and Qinning Su</i> Electronics Beijing Institute of Technology Beijing, China
DP145	A dynamic Bayesian Recovery Algorithm for Time Series Signals from Compressive Measurements <i>Daoguang Dong, Guosheng Rui, Wenbiao Tian, Yang Bao, Ge Liu</i> Navy Aviation University, China
DP161	Image Matching based on Harris-Affine Detectors and Translation Parameter Estimation by Phase Correlation <i>Yi Zheng, Ping Zheng</i> Shandong Technology and Business University, China
DP177	A simulation method of target echo power <i>Chenrui Zuo, Haiqing Jiang</i> Beijing Institute of Technology, China
DP179	Image Significance Region Detection Based on Global Color Clustering and Contrast <i>Chao Jia, Guangyu Wu, Fanshu Kong</i> Guangzhou College of Commerce, China
DP193	An Improved Correlation Filter-Based Target Tracking Method <i>Jun Liu, Zhongqiang Luo and Xingzhong Xiong</i> Sichuan University of Science and Engineering, China

DP200	A Point - Track Correlation Algorithm Based on Pixel Gradient and Direction <i>Jiali Zhong, Chao Xu, Bo Feng and Shengtao Gu</i> Anhui University, China
DP207	Identification of Ship and Corner Reflector Based on Invariant Features of the Polarization <i>Miao Wang, Min Xie, Qinning Su and Xiongjun Fu</i> Beijing Institute of Technology, China
DP232	Wide-angle ISAR imaging based on joint ICPF and PFA method <i>Hongyan Kang, Biao Tian, Yongxiang Liu</i> National University of Defense Technology, China
DP235	Study on Relative Error Distribution Ellipse of Submersible Vehicle to Avoid Threat Target <i>Xiaodong Yang, Yuhao Shan, Shihong Xing</i> Naval Submarine Academy, China
DP244	Multidimensional Scaling Analysis for Target Localization from Bistatic Range Measurements in Distributed MIMO Radars <i>Ma Fuhe, Guo Fucheng</i> National University of Defense Technology, China
DP247	Different Versions of Entropy Rate Superpixel Segmentation for Hyperspectral Image <i>Yiwei Tang, Liaoying Zhao and Lang Ren</i> HangZhou Dianzi University, China
DP263	A Connected Component Based Offshore Platforms Extraction Method of GF2 Multi-channel Optical Images <i>Yaxuan Fan, Qi Wang</i> Beijing Institute of Technology, China
DP272	Convolutional Neural Network Channel Pruning Based on Regularized Sparse <i>Chun Bao, Chongchong Yu, Tao Xie, Xinyu Hu</i> Beijing Technology and Business University, China



**Coffee Break 16:15-16:30**

## SATURDAY, JULY 20 | 16:30-19:00 (2h30mins)

### Parallel Sessions

#### S08- Computer Science I

Session Chair: Assoc. Prof. Keman Liu, Xi'an Shiyou University, China

Venue: Zhizhi-Tang Room 101 (致知堂 101 室)

Time	Paper ID	Title & Presenters
16:30-16:45	DP180	Electromagnetic Transmitter for EM-MWD System Based on Embedded RTOS: uc-OS III <i>Keman Liu, Xi'an Shiyou University, China</i>
16:45-17:00	DP190	A Pen-based Device for Signature Verification <i>Huimin Jiao, Beijing Institute of Graphic Communication, China</i>
17:00-17:15	DP218	Prediction of satellite time series data based on Long Short Term Memory-Autoregressive Integrated Moving Average model (LSTM-ARIMA) <i>Yuwei Chen, Shanghai Jiao Tong University, China</i>
17:15-17:30	DP219	Analog Compensator Design For Half Bridge LLC Resonant Converter <i>Syed Sikandar Shah, Southeast University, China</i>
17:30-17:45	DP236	A New Model for Securing Networks Based on Attack Graph <i>Yiheng Zhang, Dalian Maritime University, China</i>
17:45-18:00	DP246	Group Pruning with Group Sparse Regularization for Deep Neural Network Compression <i>Chenglu Wu, Southeast University, China</i>
18:00-18:15	DP268	High-performance Convolutional Neural Network Accelerator Based on Systolic Arrays and Quantization <i>Yufeng Li, Southeast University, China</i>
18:15-18:30	DP277	A Novel Efficient Soft Computing Model for Natural Gas Compressibility Factor based on GMDH neural network <i>Luan Lin, Shanghai Jiaotong University, China</i>
18:30-18:45	DP280	Comparison on Performance of Text-based and Model-based Architecture in Open Source Native XML database <i>Chau Kien Tsong, Universiti Sains Malaysia, Malaysia</i>
18:45-19:00	DP183	A Novel Method for Extracting Road Map from The Historical Measurement Set of Sensors <i>Haojie Yu, Beijing Institute of Technology, China</i>

## S09- Objective Detection II

Session Chair: Dr. Xuyang Chen, Xidian University, China

Venue: Zhizhi-Tang Room 102 (致知堂 102 室)

Time	Paper ID	Title & Presenters
16:30-16:45	DP155	Reflection and absorption analysis of obliquely incident wave in reentry plasma sheath <i>Xuyang Chen, Xidian University, China</i>
16:45-17:00	DP018	Weak Moving Target Detection Based on Short-Time Fourier Transform In Sea Clutter <i>Lei Zuo, Xijing University, China</i>
17:00-17:15	DP078	Marine Moving Target Detection Using Sparse Learning Dictionary <i>Ziwei Dong, Nanjing Research Institute of Electronics Technology, China</i>
17:15-17:30	DP084	Multi-Information Fusion Algorithm for Human Target Tracking <i>Dengtai Tan, Gansu Institute of political Science and Law, China</i>
17:30-17:45	DP087	Valid Data Augmentation by Patch Alpha Matting <i>Hongyun Li, Institute of Optics and Electronics, Chinese Academy of Sciences, China</i>
17:45-18:00	DP101	Vehicle detection in the aerial infrared images via an improved yolov3 network <i>Xunxun Zhang, Xi'an University of Architecture and Technology, China</i>
18:00-18:15	DP135	Research on Detection Methods of Driving Postures Based on Deformable Component Model <i>Youfeng Zheng, Southeast University, China</i>
18:15-18:30	DP140	Detecting Negative Emotional Stress Based on Facial Expression in Real Time <i>Jin Zhang, Nanjing Tech University, China</i>
18:30-18:45	DP149	Face Detection Technology Based on Combining Skin Color Model with Improved Adaboost Algorithm <i>Yang-Yu, Jiangsu University of Technology, China</i>

### S10- Image Processing III

Session Chair: Assoc. Prof. Gao Nuo, Shandong Jianzhu University, China

Venue: Zhizhi-Tang Room 104 (致知堂 104 室)

Time	Paper ID	Title & Presenters
16:30-16:45	DP008	Asynchronous brain-computer interface intelligent wheelchair system based on Alpha wave and SSVEP EEG signals <i>Gao Nuo, Shandong Jianzhu University, China</i>
16:45-17:00	DP050	Aircraft Segmentation from Remote Sensing Image by Transferring Natural Image Trained Foreground Extraction CNN Model <i>Yanqing Zeng, National University of Defense Technology, Changsha, China</i>
17:00-17:15	DP053	Current Picture Referencing mode with Affine Model in VVC <i>Jian Cao, Sun Yat-Sen University, China</i>
17:15-17:30	DP091	Gradient-based Fast Intra Coding Decision algorithm for HEVC <i>Jian Cao, Sun Yat-Sen University, China</i>
17:30-17:45	DP058	Ultrasonic Images Denoising Based on Calculus of Variations <i>Yating Fu, Zhejiang Gongshang University, China/Hangzhou Dianzi University, China</i>
17:45-18:00	DP062	Research on the spatial design of digital image deconstruction and display <i>Liu Cheng-Yu, Chaoyang University of Technology, Taiwan</i>
18:00-18:15	DP064	A Learning based Image Quality Assessment Model Assisted with Visual Saliency and Gradient Features <i>Hai Liu, Qingdao University, China</i>
18:15-18:30	DP072	A Research of Digital Image-based Cognitive Learning Systems in Applications of Preventive Medicine-An Example of Redding Elementary School, San Francisco <i>Chia-Wen Tsai, Chaoyang University of Technology, Taiwan</i>
18:30-18:45	DP073	Color image segmentation via wavelet frames <i>Jianbin Yang, Hohai University, China</i>
18:45-19:00	DP074	A Novel Fast Mode Decision Algorithm for AVS2 Intra Coding <i>Lei Cheng, Peking University, China</i>

## S11- Image Processing IV

Session Chair: -Prof. Seon-Jong Kim, Pusan National University, Korea

Venue: Qiangong-Yuan Room 104 (前工院 104 室)

Time	Paper ID	Title & Presenters
16:30-16:45	DP007	To assess the influence of artifacts on motor imagery based BCI <i>Yao Chen, Anhui University, China</i>
16:45-17:00	DP009	ISAR Resolution Enhancement Using Residual Network <i>Dan Qin, National University of Defense Technology, China</i>
17:00-17:15	DP012	Fusion Evaluation of X-Ray Backscatter Image and Holographic Subsurface Radar Image <i>Jiaxuan Jiang, National University of Defense Technology, China</i>
17:15-17:30	DP017	Feature Extraction Algorithm based on CSP and Wavelet Packet for Motor Imagery EEG signals <i>Gao Feng, Shandong Jianzhu University, China</i>
17:30-17:45	DP022	Nonparametric Bayesian Dictionary Learning for Microwave Radiation Image Recovery <i>Sainan Cao, East China Jiaotong University, China</i>
17:45-18:00	DP036	Distortion Correction Method of Bistatic ISAR Image Based on Phase Compensation <i>Baofeng Guo, Shijiazhuang Campus Army Engineering University, China</i>
18:00-18:15	DP037	Target Position Compensation Algorithm for Unmanned Aerial Vehicle Radar Image <i>Xue Yao, Chongqing Three Gorges University, China</i>
18:15-18:30	DP038	Three-Dimensional Image Reconstruction Method Based on Two-Dimensional Radar Image and Optical Image <i>Xue Yao, Chongqing Three Gorges University, China</i>
18:30-18:45	DP043	Research of Restoration Technique of Cigarette 32-bit Security Code in Strong Interference Environment <i>Qin Li, Jingzhou Tobacco Company, China</i>
18:45-19:00	DP046	A simulator for three-dimension radar imaging of complex targets <i>Fengling Wu, National University of Defense Technology, China</i>



## S12- Communication System II

Session Chair: Prof. Chong-Dao Lee, I-SHOU University, Taiwan

Venue: Qiangong-Yuan Room 105 (前工院 105 室)

Time	Paper ID	Title & Presenters
16:30-16:45	DP276	Fast Generation of Perfect Gaussian Integer Sequences of Primitive Length <i>Chong-Dao Lee, I-SHOU University, Taiwan</i>
16:45-17:00	DP165	Complex CNN-Based Equalization for Communication Signal <i>Zexuan Chang, University of Electronic Science and Technology of China, China</i>
17:00-17:15	DP191	Adaptive Opposition-Based Particle Swarm Optimization Algorithm and Application Research <i>Yan-Yan Ma, Air Force Early Warning Academy, China</i>
17:15-17:30	DP195	Physical Layer Security and Spectral Efficiency Augmentation of Quadrature Spatial Modulation using Layered Architecture <i>Saad Amir Chaudhry, Northwestern Polytechnical University, China</i>
17:30-17:45	DP196	Two-Dimension DOA Estimation Based on Mixed Circular and Non-circular Signals <i>Xiao Liang, Beijing University of Technology, China</i>
17:45-18:00	DP204	Performance monitoring of PAM4 optical communication system based on principal component analysis and support vector regression <i>Xiaodong Chen, Beijing Jiaotong University, China</i>
18:00-18:15	DP205	Intra-pulse Movement Analysis and Correction for FMCW CSAR <i>Jianfeng Zhang, National University of Defense Technology, China</i>
18:15-18:30	DP211	Direct Position Determination Under the Presence of Sensor Phase Errors with a Calibration Emitter <i>Guizhou Wu, National University of Defense Technology, China</i>
18:30-18:45	DP216	Fairness based Power Allocation optimization of Cooperative NOMA with SWIPT network <i>Zhenwei Zhang, Xi'an Jiaotong University, China</i>
18:45-19:00	DP242	Energy Efficient transmission design of cooperative NOMA with SWIPT network <i>Zhenwei Zhang, Xi'an Jiaotong University, China</i>

### S13- Communication System III

Session Chair: TBA

Venue: Qiangong-Yuan Room 106 (前工院 106 室)

Time	Paper ID	Title & Presenters
16:30-16:45	DP270	A Method of Radar Signal Feature Extraction Based on Fractional Fourier Transform <i>Chen Shiwen, PLA Strategic Support Force Information Engineering University, China</i>
16:45-17:00	DP245	Communication Design for Underwater Acoustic Positioning Networks <i>Yushi Liu, Tufts University, USA</i>
17:00-17:15	DP269	High Energy Efficiency FPGA-based Accelerator for Convolutional Neural Networks Using Weight Combination <i>Chenghao Shu, Southeast University, China</i>
17:15-17:30	DP508	Research on Anti-interference Performance of Sparsity-based SAR Imaging <i>Guojing Li, Space Engineering University, China</i>
17:30-17:45	DP095	Order-adaptive Fractional-Order Moment-based Estimation of Shape Parameter of K-distribution <i>Li Zhiyuan, Xidian University, China</i>
17:45-18:00	DP252	Internal Threat Prediction Algorithm Based on VASG Model <i>Xiao He, Henan College of Industry &amp; Information Technology, China</i>
18:00-18:15	DP111	Denoising Reconstruction of Evaporation Duct Based on Variable Parameter Threshold Approximation Message Passing Method <i>LIU Ge, Naval Aviation University, China</i>
18:15-18:30	DP059	Network virtual reality clothing silhouette design influencing factors <i>Hsu Chia-Cheng, Chaoyang University of Technology, Taiwan</i>
18:30-18:45	DP125	Racing APUF: a Novel APUF against Machine Learning Attack with High Reliability <i>Zheng Li, Southeast University, China</i>
18:45-19:00	DP248	Group Tracking Method with Adaptive Gate for Multiple Extended Objects Tracking <i>Qianlan Huang, National University of Defense Technology, China</i>

## S14- Signal Processing

Session Chair: Dr. Likun Ren, Naval Aviation University Qingdao Campus, China

Venue: Qiangong-Yuan Room 107 (前工院 107 室)

Time	Paper ID	Title & Presenters
16:30-16:45	DP088	Rolling Bearings Fault Diagnosis via 1D Convolution Networks <i>Likun Ren, Naval Aviation University Qingdao Campus, China</i>
16:45-17:00	DP071	Azimuth Ambiguity Erasing in Spaceborne Bistatic SAR Images <i>Feng He, National University of Defense Technology, China</i>
17:00-17:15	DP055	Signal sorting algorithm based on extended histogram <i>Chaofan Zheng, National University of Defense Technology, China</i>
17:15-17:30	DP094	Method for monitoring hydraulic coke removal based on cylindrical-array fiber acoustic sensors <i>Yan Mao, Wuhan University of Technology, China</i>
17:30-17:45	DP121	A Multi-line Arbiter PUF with improved Reliability and uniqueness <i>Jing Wen, Southeast University, China</i>
17:45-18:00	DP129	Exploiting Correlation in Distributed Cooperative Compressive Wideband Spectrum Sensing <i>Lei Cao, University of Mississippi, USA</i>
18:00-18:15	DP148	The frequency-shifting modulation of radar signal using active Van Atta array <i>Song Kunpeng, National University of Defense Technology, China</i>
18:15-18:30	DP212	Sparse recovery via iterative minimization for the recovery of complex-valued target high-resolution range profile <i>Kun Zhang, Xidian University, China</i>
18:30-18:45	DP278	A Novel Signal Processing Method Based on Cross-correlation and Interpolation for ToF Measurement <i>Sihao Sun, Shanghai Jiaotong University, China</i>

**19:00-20:00**

**Dinner at Tao Yuan Cafeteria(桃园餐厅)**

## SUNDAY, JULY 21 | 09:00-11:45 (2h45mins)

### Parallel Sessions

#### S15- Computer Vision

Session Chair: Prof. Wu Guangli, Gansu Institute of political Science and Law, China

Venue: Qiangong-Yuan Room 104 (前工院 104 室)

Time	Paper ID	Title & Presenters
09:00-09:15	DP089	Video Abnormal Event Detection Based on ELM <i>Wu Guangli, Gansu Institute of political Science and Law, China</i>
09:15-09:30	DP105	A Novel Ionospheric Scintillation Mitigation Method Based on Minimum-Entropy Autofocus in P-band SAR Imaging <i>Lei Yu, National University of Defense Technology, China</i>
09:30-09:45	DP143	A Graphical PIN Entry System with Shoulder Surfing Resistance <i>Muhammad Salman, Nanjing University of Aeronautics and Astronautics, China</i>
09:45-10:00	DP173	Preliminary Results of Multipath Ghost Suppression Based on Generative Adversarial Nets in TWRI <i>Gang Wang, Chengdu University of Technology, China</i>
10:00-10:15	DP187	An azimuth nonlinear chirp scaling algorithm for high squint FMCW SAR imaging <i>LongChao Li, National University of Defense Technology, China</i>
10:15-10:30	DP197	Multi-scale spatial-temporal feature aggregating for video salient object segmentation <i>Changhong Mu, Soochow University, China</i>
10:30-10:45	DP221	Category-Level Multi-Attention based Boundary Refinement for Action Detection <i>Peixiang Dong, CCTV International Network Wuxi Co., Ltd, China</i>
10:45-11:00	DP271	A Signal Analysis for Feature Points Tracking of Lip Movements <i>Suhyeon Cho, Pusan National University, Korea</i>
11:00-11:15	DP279	join voxel flow and adaptive convolutional kernel for video colorization <i>Yu Chen, Shanghai University, China</i>
11:15-11:30	DP258	A New Similarity Measurer for Color Texture and Its Clustering for Apple <i>Jun Hyeok Lee, Pusan National University, Korea</i>
11:30-11:45	DP222	Boundary Matched Human Area Segmentation for Chroma Keying using Hybrid Depth-Color Analysis <i>Puji Lestari, Indonesian Institute of Sciences and Technische Universität Ilmenau, Indonesia</i>

## S16- Computer Science II

Session Chair: Assoc. Prof. Zigang Ge, Beijing University of Posts and Telecommunications, China

Venue: Qiangong-Yuan Room 105 (前工院 105 室)

Time	Paper ID	Title & Presenters
09:00-09:15	DP014	A Literature Review of the Adaptive Algorithms Adopted in Adaptive Learning Systems <i>Zigang Ge, Beijing University of Posts and Telecommunications, China</i>
09:15-09:30	DP1001	A VLSI Implementation of Double Precision Floating-Point Logarithmic Function <i>Hao Liu, Harbin Institute of Technology, ShenZhen, China</i>
09:30-09:45	DP028	Joint empirical mode decomposition and singular spectrum analysis based pre-processing method for wearable non-invasive blood glucose estimation <i>Xueling Zhou, Guangdong University of Technology, China</i>
09:45-10:00	DP039	An anti-jamming method against SAR stationary deceptive targets based on DPCA processing <i>Penghui Ji, National University of Defense Technology, China</i>
10:00-10:15	DP070	Defect Analysis of Inner-Wall of Pipes by Differentiated Residual Blocks of Convolutional Neural Network <i>Thanh-An NGUYEN, Japan Advanced Institute of Science and Technology, Japan</i>
10:15-10:30	DP098	Speech care system for stroke based on asynchronous Brain-Computer Interface (BCI) <i>Yang Yuna, Shandong Jianzhu University, China</i>
10:30-10:45	DP122	A New group-to-group Authentication Scheme Based on PUFs and Blockchain <i>Ben Liu, Southeast University, China</i>
10:45-11:00	DP139	Polynomial Fitting Based Crosstalk Suppression in the Monostatic FMCW Radar <i>Qingsheng Yu, Beihang University, China</i>
11:00-11:15	DP151	Making Deep Neural Networks Robust to Label Noise: A Reweighting Loss and Data Filtration <i>Zhengwen Zhang, Beijing Institute of Technology, China</i>
11:15-11:30	DP054	Improved Variable Step Size Regularized NLMS-Based Algorithm for Speech Enhancement <i>Mohamed Salah Mahmoud Hassan, Ain Shams University, Egypt</i>

## S17- Image Processing V

Session Chair: Assoc. Prof. Yi Sun, The City College of New York, USA

Venue: Qiangong-Yuan Room 106 (前工院 106 室)

Time	Paper ID	Title & Presenters
09:00-09:15	DP162	Temporal Correlation Approach to Quality Improvement of Frame-by-Frame Localization Nanoscopy Images <i>Yi Sun, The City College of New York, USA</i>
09:15-09:30	DP128	Dielectric Information Extraction Based on Microwave Scattering Model <i>Changbao Yang, Jilin University, China</i>
09:30-09:45	DP134	Infrared Image Super Resolution Using GAN with Infrared Image Prior <i>Yifan Yang, Zhejiang University, China</i>
09:45-10:00	DP150	A Large Bandwidth Sliding Spotlight SAR Image Formation Based on Generalized Chirp Scaling and Moving Band Chirp-z Transform <i>Xing Chen, National University of Defense Technology, China</i>
10:00-10:15	DP152	CNN Model for Screen Content Image Quality Assessment based on Region Difference <i>Ruidong Li, Qingdao University, China</i>
10:15-10:30	DP124	Design of Intelligent acquisition system for Tomato Leaf area <i>Qingfeng Yang, Hefei institutes of Physical Chinese Academy of Sciences, Hefei, China</i>
10:30-10:45	DP159	Superpixel Generation for PolSAR Images with Global Weighted Least-Squares Filtering and Linear Spectral Clustering <i>Xianxiang Qin, Air Force Engineering University, China</i>
10:45-11:00	DP163	A method based on multi-source feature detection for counting people in crowded areas <i>Gong Songchenchen, University of Burgundy, France</i>
11:00-11:15	DP175	Missing Information Reconstruction of Three-order Tensor <i>Jin Jiang, Nanjing University of Aeronautics and Astronautics, China</i>
11:15-11:30	DP176	Underwater Image Enhancement by Gaussian Curvature Filter <i>Jiaying Xiong, Nanjing University of Information Science &amp; Technology, China</i>

## S18- Pattern Recognition and Classification III

Session Chair: Assoc. Prof. Benezeth Yannick, Univ. Bourgogne Franche-Comté, France

Venue: Qiangong-Yuan Room 107 (前工院 107 室)

Time	Paper ID	Title & Presenters
09:00-09:15	DP226	Two schemes for automated diagnosis of Lentigo on Confocal Microscopy images <i>Benezeth Yannick, Univ. Bourgogne Franche-Comté, France</i>
09:15-09:30	DP001	A method for identifying and classifying resistors and capacitors based on YOLO network <i>Yanyi Lu, Hangzhou Dianzi University, China</i>
09:30-09:45	DP015	Overview of one-class classification <i>Hu Wenting, Naval Aeronautical University Qingdao Branch, China</i>
09:45-10:00	DP016	Activity Recognition with Wristband Based on Histogram and Bayesian Classifiers <i>Yi-Cong Huang, Guangdong University of Technology, China; Add Care Limited, Hong Kong</i>
10:00-10:15	DP020	A Novel Skeleton Spatial Pyramid Model for Skeleton-based Action Recognition <i>Tianyu Guo, Shenzhen University, China</i>
10:15-10:30	DP021	Skeleton-based Action Recognition with Lie Group and Deep Neural Networks <i>Tianyu Guo, Shenzhen University, China</i>
10:30-10:45	DP023	A New Radar Signal Modulation Recognition Algorithm Based on Time-frequency Transform <i>Jinliang Bai, Beijing Institute of Space Long March Vehicle, Beijing, China</i>
10:45-11:00	DP025	Design of the Codewords for Performing the Pattern Recognitions via a Set of Perceptrons with the Domains of These Activation Functions Have More Than Two Pieces <i>Ziyin-Huang, Guangdong University of Technology, China</i>
11:00-11:15	DP030	Off-grid STAP Algorithm Based on Reduced-Dimension Local Search Orthogonal Matching Pursuit <i>Qichao Ge, Air Force Engineering University, China</i>
11:15-11:30	DP047	A Radar Main Lobe Pulse Correlation Sorting Method <i>Lin Cheng, National University of Defense Technology, China</i>
11:30-11:45	DP048	Research on Chinese Sign Language Recognition Methods Based on Mechanomyogram Signals Analysis <i>Jing Yu, East China University of Science and Technology, China</i>