

Message from New Editor-in-Chief

Since the first issue published in April 2012, APSIPA newsletter has acted as a channel to provide updated news to its members. Prof. Abdulla Waleed, our previous Editor-In-Chief (EiC) for four years, has always strived to publish relevant and timely information such as the latest news about APSIPA, technical trends in signal and information processing, etc. It is my great honor to succeed Prof. Waleed and serve as the EiC to build upon his work in these two years. Teamwork is always very important. I am happy to tell you that the following colleagues have agreed to remain in the APSIPA Newsletter editorial board. They are,



- Professor Eliathamby Ambikairajah, University of New South Wales
- Professor Yoshinobu Kajikawa, Kansai University
- Professor Kenneth Lam, The Hong Kong Polytechnic University
- Professor Xie Lei, Northwestern Polytechnical University
- Professor Thomas Zheng, Tsinghua University

If you would like to join the editorial board, please do not hesitate to contact us. With more new members, we will work together to provide timely materials in APSIPA newsletter.

APSIPA is an emerging association to promote broad spectrum of research and education activities in signal and information processing. Since the Steering Committee meeting in 2007, APSIPA has grown significantly. We have over 3000 e-members and members from more than 30 countries. To allow members to know more about the organization and key members in APSIPA, we invite APSIPA officers to tell us their visions and activities that members would feel interested in. In this issue, three key members who share with us their ideas are,

- Professor Anthony Kuh, Vice President of Technical Activities
- Professor Yoshinobu Kajikawa, BoG member
- Professor Toshihisa Tanaka, BoG member

In this issue

VP – Technical Activities: Prof Anthony Kuh	Page 2
BoG: Prof Yoshinobu Kajikawa	Page 3
BoG: Prof Toshihisa Tanaka	Page 4
APSIPA ASC 2015, 2016	Page 5
Distinguished Lecturers Program	Page 10
News about Friend Labs	Page 13
A Free 30-hour Chinese Speech Database	Page 17

In addition, we would also like to recall your memories about the recent 2015 APSIPA Annual

Summit and Conference (APSIPA ASC 2015) held in Hong Kong. A piece of good news to share with you is that the APSIPA ASC 2015 proceeding has been posted on IEEE Xplore since 4th March, 2016. You may

wish to check if your paper is there (<http://ieeexplore.ieee.org/search/searchresult.jsp?newsearch=true&queryText=APSIPA%202015>). We take this opportunity to invite you all to participate in APSIPA ASC 2016 which will be held in December 2016 in Jeju, Korea (<http://www.apsiap2016.org>).

A major educational activity in APSIPA is the Distinguished Lecturer Program. It promotes the research and development of signal and information processing in Asia-Pacific region. A brief introduction to the seven newly selected Distinguished Lecturers in 2016-2017 is given. Friend Labs is another recent activities of APSIPA to provide education, research and development exchange platforms for both academia and industry. A summary of the activities of Friend Labs for the past three months is provided.

Data are always important in academic research. It allows algorithms to be compared fairly. We are pleased to tell that a free 30-hour Chinese Speech Database is described in this issue. Last, we sincerely invite you to send us your contributions to publish in APSIPA Newsletter. You are also invited to give us your thoughts about the further development of APSIPA Newsletter. Enjoy reading this issue!

Bonnie Law

Message from VP – Technical Activities

Prof. Anthony Kuh
Dept. of Electrical Engineering
University of Hawaii
Email: kuh@hawaii.edu



I am pleased to serve as VP of technical activities for 2016 – 2017. As VP of Technical activities I look to strengthen the current six Technical Committees (TC)s and to promote best practices among the TCs. The six TCs and the TC chairs are:

- Signal Processing Systems: Design and Implementation (SPS): Chair Gwo Giun Lee
- Signal and Information Processing Theory and Methods(SIPTM): Chair Akira Hirabayashi
- Speech, Language, and Audio (SLA): Chair Changchun Bao
- Biomedical Signal Processing and Systems (BioSiPS): Chair Tomasz M. Rutkowski
- Image, Video, and Multimedia (IVM): Chair Jiwu Huang
- Wireless Communications and Networking (WCN): Chair Tomaoki Ohtsuki

To do this I will work closely with TC chairs to update and recruit new members to the TCs. Together (the TC chairs and I), will also work with the VP of Conferences Thomas Fang Zheng, VP of Publications Tatsuya Kawahara, and the Editor in Chief (EIC) of the APSIPA Transactions on Signal and Information Processing Antonio Ortega to increase activities and contribute more to conferences and publications. We will also work closely with the Vice President of Membership Relationships and Development Kenneth Lam, the Vice President of Industrial Relationships and Development. Shan Liu, and the Chair of the Friend Lab Promotion Committee, Jay Kuo to promote more members to join the TCs. The TC chairs have submitted articles in past APSIPA Newsletters.

To recruit new members to TCs we will work with the TC chairs, Kenneth Lam, Shan Liu, and Jay Kuo to work with members of APSIPA to encourage them to join TCs. We are especially interested in recruiting underrepresented groups. This includes junior faculty, women, and members from underrepresented

countries. We will discuss the benefits of joining TCs which include opportunities to meet other APSIPA members, participate in APSIPA activities including review of submitted papers for the APSIPA Annual Summit and Conference (ASC), and learn about research activities of APSIPA members for discussion and possible collaborations.

The VP of Technical Activities will work closely with the VP of publications, the EIC of the APSIPA Transactions on Signal and Information Processing and the VP of conferences to ensure the success of the APSIPA Transactions and the APSIPA ASC. This includes submitting more papers to both the APSIPA Transactions and the APSIPA ASC. We will also encourage TCs to submit special issues to the APSIPA Transactions and encourage TCs to submit more special sessions to the APSIPA ASC. We will also be looking at new technical directions in areas from big data to energy to biomedical applications.

We are also looking at opportunities to enhance activities for TCs. As an example, the Biomedical Signal Processing Signal and Systems (BioSIPS) TC has organized a regional workshop the last few years that has been successful. The first workshop was in Bangkok, Thailand in 2013 (see APSIPA Newsletter Issue 3) and they have had successive workshops in Bangladesh and Shanghai, China. I would encourage other TCs to also consider holding regional workshops. Other activities include having TC members working with the VP of Institutional Relations and Education Program, Yo-Sung Ho to become distinguished lecturers and working to sponsor educational activities such as seasonal schools.

I welcome the members of the APSIPA community to contact me about any comments or suggestions that you have about technical activities. If you are interested in joining one of the TCs I will be happy to get you in contact with the TC chair of the TC you are interested in.

Message from APSIPA BoG Member

Prof. Yoshinobu Kajikawa
Faculty of Engineering Science
Kansai University
Email: kaji@kansai-u.ac.jp



I am really honored to contribute to APSIPA activities as a new BoG member. APSIPA is one of most important academic society for all researchers related to signal and information processing. I have been attending APSIPA ASCs since the first conference held in Hokkaido and organizing special sessions since the second conference held in Singapore. I feel a special attachment to APSIPA because I have got many friends and colleagues through APSIPA activities. First of all, I met Prof. Waleed Abdulla from University of Auckland in the first APSIPA ASC who has been contributing to APSIPA as a BoG member. At that time, he presented his excellent research results related to active noise control, which is one of my research topics. Since then, Prof. Abdulla and I organized some special sessions in APSIPA ASCs. The first special session was held in the second APSIPA ASC. I invited Prof. Woon-Seng Gan from Nanyang Technological University, who is also a BoG member, to our special session. His research topics are really similar to those of mine. After that, he becomes not only a research colleague but also a close family friend.

As just described, APSIPA has brought many friends and many excited opportunities to me. So, I would like to help young researchers make their friends and get research opportunities through APSIPA activities. I think one of important activities is Friend Labs through which we can know who is related to your research areas and which laboratories attract you. In the latest APSIPA ASC, the friend labs sessions were held for the first time and I joined one of the sessions. I could know variety of excellent laboratories and their research activities, so I strongly recommend more people register their laboratories on APSIPA Friend Labs. Finally, I would like to briefly introduce myself. I am now a professor in Kansai University (one of the oldest private universities in Japan). Before that, I joined Fujitsu Ltd. where I engaged in research on active noise control.

Since then, my research interests lie in the area of signal processing for audio and acoustic systems, especially active noise control and nonlinear signal processing for loudspeaker systems. Anyway, I look forward to working closely with all of you and as a BoG member.

Message from APSIPA BoG Member

Prof. Toshihisa Tanaka
Dept of Electrical and Electronic Engineering
Tokyo University of Agriculture and Technology
Email: tanaka@sip.tuat.ac.jp



Towards the Promotion of Diversity in APSIPA

Signal processing that started as a branch of electrical engineering has grown up to an interdisciplinary area covering various topics of science and technology. Although most research activities are from Europe and US, nowadays academic research in Asia-Pacific region is on the rise. In the area of signal and information processing, no one doubts about the future growth of the importance and presence of APSIPA. In such a period of transition, I am very honored and fortunate to be asked to serve as a Member-at-Large of Board-of-Governors of APSIPA.

APSIPA is a prominent part of my research career. Since the first APSIPA ASC in Sapporo Japan, I have participated in six of the past seven annual meetings. All of the meetings were wonderful to me. I deeply appreciate tremendous efforts of the organizers. One of my exciting moments in APSIPA was to initiate a technical committee on biomedical signal processing and systems (BioSiPS TC). It was not easy to launch the team because this research area in Asia-Pacific region is a little weaker than other areas such as speech, audio, video, and so forth. However, with the help of my wonderful friends and colleagues, BioSiPS TC became one of the most active technical committees in APSIPA. Now the activity of BioSiPS TC involves not only organizing special sessions at APSIPA ASC, but also holding annual workshops. We have previously held three workshops in Bangkok, Thailand (2013), Rajshahi, Bangladesh (2014), and Shanghai, China (2015).

In line with the increasing diversity of signal processing research, my interest has likewise transferred from filter bank design to biomedical signal processing and neuroscience via adaptive filtering. In particular, the main research topic is the study of various aspects of brain-machine interfacing (BMI), which provides another pathway from the brain to the external world by measuring electrophysiological recordings such as electroencephalogram (EEG). The recordings are then translated to interpretable messages, which are sometimes fed back to human. The reason why this research area fascinates me is twofold. On one hand the translation (often called the *decoding*) of electrophysiological signals is very challenging, since electric noise, physiological artifacts, and background signals often heavily contaminate raw signals. This implies that signal processing and machine learning play an important role in decoding. On the other hand, the brain is still in mystery—the brain is a black box. Yes, we need system identification! Actually, some of the methodologies in neuroscience to understand the brain are very similar to system identification in engineering, that is, “giving various types of inputs, and observing the outputs”. Thus, the research of BMI is highly interdisciplinary. Signal processing, machine learning, mathematics, statistics, neuroscience and engineering are interacting with each other. Applications of BMIs in the medial area are very promising: brain-computer interfacing (BCI) to control computers (see Fig. 1) or prostheses, neurorehabilitation to enhance neural plasticity and optimize motor recovery (see Fig. 2) of paralyzed patients, and so forth.

My colleagues from BioSiPS and I have been continuously organizing special sessions on this research area at APSIPA ASC. I would like to invite readers who are interested in this attractive research area, and in fact

everyone, to attend or contribute to sessions of the BioSiPS track at APSIPA ASC. Furthermore, I would be very grateful if I could contribute to the further expansion of APSIPA.



Figure 1 Brain-computer interface



Figure 2 Measuring the effect of neurorehabilitation.

APSIPA ASC 2015

The 2015 APSIPA Annual Summit and Conference (APSIPA ASC 2015) was held in Hong Kong from December 16-19, 2015. This is the seventh annual conference organized by APSIPA. Annual conferences have previously been held in Japan (2009), Singapore (2010), China (2011), the USA (2012), Taiwan (2013), and Cambodia (2014). APSIPA ASC 2015 has received 325 submissions from authors of 28 countries.

One of the highlights of the conference was the keynote speeches given by Prof. Sadaoki Furui (Toyota Technological Institute at Chicago), Prof. Alex Kot (Nanyang Technological University) and Prof. Antonio Ortega (University of Southern California). They have provided us insights into the respective research areas. Besides, the technical programs contained 22 special sessions which addressed a number of areas that were beyond the scope of regular sessions. To introduce the state-of-the-art of different signal and information processing technologies, 5 tutorials and 11 invited overview talks were given by renowned scholars in the respective fields of study. Another highlight of the conference was the Industrial Plenary Forum. Top executives of world leading companies including Mr Yi Hao (President, TCL Multimedia), Dr Kevin Jou (Corporate Vice President, MediaTek), Mr Benoit Schillings (Vice President & Technical Fellow, Yahoo!) and Dr Yasunori Mochizuki (Vice President, NEC) have shared their vision and insights on the future of smart life in the Forum.

The proceedings of APSIPA ASC 2015 are accessible online at APSIPA website (http://www.apsipa.org/proceedings_2015/index.html). Besides, they have been posted on IEEE Xplore since 4th March, 2016 ([http://ieeexplore.ieee.org/search/searchresult.jsp?newsearch=true&queryText=APSIPA % 202015](http://ieeexplore.ieee.org/search/searchresult.jsp?newsearch=true&queryText=APSIPA%202015)). The APSIPA ASC 2016 will be held in Jeju, Korea in Dec 2016. The deadline for regular submission is 31 May 2016. **Don't miss it!** We look forward to seeing you there!

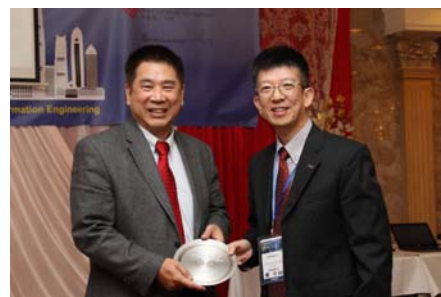
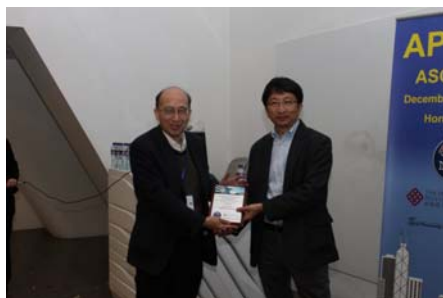
The best papers awards in APSIPA ASC 2015:

- DCTNet : A simple Learning-free Approach for Face Recognition
Cong Jie Ng and Andrew Beng Jin Teoh, Yonsei University
- Music Removal by Convolutional Denoising Autoencoder in Speech Recognition
Mengyuan Zhao, Dong Wang, Zhiyong Zhang and Xuewei Zhang, Tsinghua University
- An Efficient Heuristic for Restorable Energy Aware Routing in Networks with Bundled Links
Rui Wang, Suixiang Gao, Wenguo Yang and Zhipeng Jiang, University of Chinese Academy of Sciences
- Supervised Nonnegative Matrix Factorization Using Active-Period-Aware Structured L1-Norm for Music Transcription
Yu Morikawa, Niigata University, Masahiro Yukawa, Keio University and Hisakazu Kikuchi, Niigata University
- Subspace-Constrained Multilinear Discriminant Analysis for ERP-based Brain Computer Interface Classification
Hiroshi Higashi, Toyohashi University of Technology, Tomasz Rutkowski, University of Tsukuba, Toshihisa Tanaka and Yuichi Tanaka, Tokyo University of Agriculture and Technology



Congratulations!

Snapshots of APSIPA ASC 2015





Key members of APSIPA



Part of the attendees of APSIPA ASC 2015

The 8th APSIPA ASC 2016

December 13-16, 2016, Jeju, South Korea

Organizing Committee

Honorary Co-Chairs:

Sadaoki Furui (Tokyo Institute of Technology, Japan)
K.J. Ray Liu (University of Maryland, USA)
Wan-Chi Siu (Hong Kong Polytechnic University, Hong Kong)
Sang Uk Lee (Seoul National University, Korea)

General Co-Chairs:

Yo-Sung Ho (Gwangju Institute of Science and Technology, Korea)
C.-C. Jay Kuo (University of Southern California, USA)
Haizhou Li (Institute for Infocomm Research, A*STAR, Singapore)

Technical Program Co-Chairs:

Nam Ik Cho (Seoul National University, Korea)
Thomas Fang Zheng (Tsinghua University, China)
Hitoshi Kiya (Tokyo Metropolitan University, Japan)
Homer Chen (National Taiwan University, Taiwan)
Anthony Kuh (University of Hawaii at Manoa, USA)
Jiwu Huang (Shenzhen University, China)

Forum Session Co-Chairs:

Changick Kim (Korea Advanced Institute of Science and Technology, Korea)
Byeungwoo Jeon (Sungkyunkwan University, Korea)
Kwanghoon Sohn (Yonsei University, Korea)
Woon Seng Gan (Nanyang Technological University, Singapore)
Waleed Abdulla (University of Auckland, New Zealand)

Panel Session Co-Chairs:

Nam Soo Kim (Seoul National University, Korea)
Yong Man Ro (Korea Advanced Institute of Science and Technology, Korea)
Wonha Kim (Kyung Hee University, Korea)
Ming-Ting Sun (University of Washington, USA)
Kiyoharu Aizawa (University of Tokyo, Japan)

Special Session Co-Chairs:

Yung-Lyul Lee (Sejong University, Korea)
Jeongtae Kim (Ewha Womans University, Korea)
Hale Kim (Inha University, Korea)
Akihiko Sugiyama (NEC Corporation, Japan)
Mark Liao (Institute of Information Science, Academia Sinica, Taiwan)

Tutorial Co-Chairs:

Sang-Hoon Lee (Yonsei University, Korea)
Min-Cheol Hong (Soongsil University, Korea)
Kate Shim (Yonsei University, Korea)
Hsueh-Ming Hang (National Chiao-Tung University, Taiwan)

Publication Co-Chairs:

Chang-Su Kim (Korea University, Korea)
Dong-Gyu Sim (Kwangju University, Korea)
Chee Seng Chan (University of Malaya, Malaysia)
Tatsuya Kawahara (Kyoto University, Japan)

Publicity Co-Chairs:

Kyoungmu Lee (Seoul National University, Korea)
Joonki Paik (Chung-Ang University, Korea)
Ki Ryong Kwon (Pukyong National University, Korea)
Dongbo Min (Chungnam National University, Korea)
Yoshinobu Kajikawa (Kansai University, Japan)
Susanto Rahardja (Northwestern Polytechnical University, China)
Mrityunjay Chakraborty (Indian Institute of Technology, India)
Kosin Chamnongthai (King Mongkut's University of Technology Thonburi, Thailand)
Thanh-Sach Le (Ho Chi Minh City University of Technology, Vietnam)

Web Co-Chairs:

Young-Woo Suh (Korean Broadcasting System, Korea)
Byung Tae Oh (Korea Aerospace University, Korea)
Jewon Kang (Ewha Womans University, Korea)

Finance Co-Chairs:

Sang-Keun Lee (Chung-Ang University, Korea)
Jong-II Park (Hanyang University, Korea)
Kenneth Lam (Hong Kong Polytechnic University, Hong Kong)

Registration Co-Chairs:

Hong Kook Kim (Gwangju Institute of Science and Technology, Korea)
Jong Won Shin (Gwangju Institute of Science and Technology, Korea)

Local Arrangement Co-Chairs:

Jae Yun Lim (Jeju National University, Korea)
Kang-Sun Choi (KoreaTech, Korea)

Asia-Pacific Signal and Information Processing Association Annual Summit and Conference 2016

CALL FOR PAPERS

APSIPA ASC 2016 will be the eighth annual conference organized by the Asia-Pacific Signal and Information Processing Association (APSIPA). Founded in 2009, APSIPA aims to promote research and education in signal processing, information technology and communications. Annual conferences have previously been held in Japan (2009), Singapore (2010), China (2011), the USA (2012), Taiwan (2013), Cambodia (2014), and Hong Kong (2015). The field of interest of APSIPA concerns all aspects of signal and information including processing, recognition, classification, communications, networking, computing, system design, security, implementation, and technology with applications to scientific, engineering and social areas.

The technical programs include following tracks, but are not limited to:

1. Biomedical Signal Processing and Systems (BioSiPS)

Biomedical Signal and Information: Theory and Methods, Medical Information and Telecare Systems, Neural Systems and Applications, Bio-inspired Signal Processing and System, Biomedical Circuits and Systems.

2. Signal Processing Systems: Design and Implementation (SPS)

Nanoelectronics and Gigascale Systems, VLSI Systems and Applications, Embedded Systems, 3D Video Processing and Coding, High Efficiency Video Coding.

3. Image, Video and Multimedia (IVM)

Image/Video Processing, Coding and Analysis, Image/Video Storage, Retrieval and Authentication, Computer Vision and Graphics, Multimedia Systems and Applications.

4. Speech, Language and Audio (SLA)

Audio Processing, Speech Information Processing: Recognition, Synthesis, Understanding and Translation, Natural Language Processing: Language Modeling, Natural Language Generation/Understanding, Machine Translation.

5. Signal and Information Processing Theory and Methods (SIPTM)

Modern Signal Processing Theory and Method, Detection and Parameter Estimation, Array Processing and Multi-channels, Signal and Information Processing in Applications.

6. Wireless Communications and Networking (WCN)

Information and Network Security, Wireless Communications and Networking, Standards and Emerging Technology, RF and Antennas.

Paper Submission

Prospective authors are invited to submit either full papers, up to 10 pages in length, or short papers up to 4 pages in length, where full papers will be for the single-track oral presentation and short papers will be mostly for poster presentation.

Important Dates

Submission of Proposals for Special Session, Forum, Panel and Tutorial Sessions	April 30, 2016
Submission of Full and Short Papers	May 31, 2016
Submission of Special Session Papers	May 31, 2016
Notification of Paper Acceptance	August 31, 2016
Submission of Camera-Ready Papers	September 30, 2016
Author Registration Deadline	September 30, 2016
Tutorial Session Date	December 13, 2016
Summit and Conference Dates	December 14-16, 2016



Supporting Societies



Gwangju Institute of Science and Technology

Distinguished Lecturers Program

APSIPA establishes the Distinguished Lecturer (DL) Program to serve the communities by organizing lectures given by distinguished experts. It is an educational program that promotes the research and development of signal and information processing in Asia Pacific region. APSIPA distinguished lecturers are distinguished experts selected by the APSIPA Institutional Relation and Education Board and approved by the APSIPA President Haizhou Li. During the two-year term, they will be serving as an ambassador of APSIPA and outreaching to audience worldwide. For more information about the DL Program, please contact Prof. Yo-Sung Ho who is the VP of Institutional Relation and Education Program. This year, we have seven newly selected Distinguished Lecturers.

Dr. Wen-Huang Cheng received the B.S. and M.S. degrees in computer science and information engineering from National Taiwan University, Taipei, Taiwan, in 2002 and 2004, respectively, where he received the Ph.D. (Hons.) degree from the Graduate Institute of Networking and Multimedia in 2008. He is an Associate Research Fellow with the Research Center for Information Technology Innovation (CITI), Academia Sinica, Taipei, Taiwan, where he is the Founding Leader with the Multimedia Computing Laboratory (MCLab), CITI, and an Assistant Research Fellow with a joint appointment in the Institute of Information Science. Before joining Academia Sinica, he was a Principal Researcher with MagicLabs, HTC Corporation, Taoyuan, Taiwan, from 2009 to 2010. His current research interests include multimedia content analysis, multimedia big data, deep learning, computer vision, mobile multimedia computing, social media, and human computer interaction. He has received numerous research awards, including the 2015-2016 Presidential Achievement Award of Rotary International, the Outstanding Youth Electrical Engineer Award from the Chinese Institute of Electrical Engineering in 2015, the Top 10% Paper Award from the 2015 IEEE International Workshop on Multimedia Signal Processing, the Outstanding Reviewer Award from the 2015 ACM International Conference on Internet Multimedia Computing and Service, the Prize Award of Multimedia Grand Challenge from the 2014 ACM Multimedia Conference, the K. T. Li Young Researcher Award from the ACM Taipei/Taiwan Chapter in 2014, the Outstanding Young Scholar Awards from the Ministry of Science and Technology in 2014 and 2012, the Outstanding Social Youth of Taipei Municipal in 2014, the Best Reviewer Award from the 2013 Pacific-Rim Conference on Multimedia, and the Best Poster Paper Award from the 2012 International Conference on 3D Systems and Applications. He is APSIPA Distinguished Lecturer. His DL titles are:



- Exploring Social Semantics from Multimedia Big Data
- Sensing Visual Semantics for Interactive Multimedia Applications

Dr. Gene Cheung received the B.S. degree in electrical engineering from Cornell University in 1995, and the M.S. and Ph.D. degrees in electrical engineering and computer science from the University of California, Berkeley, in 1998 and 2000, respectively. He was a senior researcher in Hewlett-Packard Laboratories Japan, Tokyo, from 2000 till 2009. He is now an associate professor in National Institute of Informatics in Tokyo, Japan. He has been an adjunct associate professor in the Hong Kong University of Science & Technology (HKUST) since 2015.



His research interests include 3D image processing, graph signal processing, and signal processing for sleep analysis. He has served as associate editor for IEEE Transactions on Multimedia (2007-2011), DSP Applications Column in IEEE Signal Processing Magazine (2010-2014) and

SPIE Journal of Electronic Imaging (2014-2016). He currently serves as associate editor for IEEE Transactions on Image Processing (2015-present), IEEE Transactions on Circuits and Systems for Video Technology (2016-present) and APSIPA Journal on Signal & Information Processing (2011-present), and as area editor for EURASIP Signal Processing: Image Communication (2011-present). He served as the lead guest editor of the special issue on “Interactive Media Processing for Immersive Communication” in IEEE Journal on Special Topics on Signal Processing, published in March 2015. He served as a member of the Multimedia Signal Processing Technical Committee (MMSP-TC) in IEEE Signal Processing Society (2012-2014), and a member of the Image, Video, and Multidimensional Signal Processing Technical Committee (IVMSP-TC) (2015-2017). He has also served as technical program co-chair of International Packet Video Workshop (PV) 2010 and IEEE International Workshop on Multimedia Signal Processing (MMSP) 2015, and symposium co-chair for CSSMA Symposium in IEEE GLOBECOM 2012. He was invited as plenary speaker for IEEE MMSP 2013 on the topic “3D visual communication: media representation, transport and rendering”. He is a co-author of best student paper award in IEEE Workshop on Streaming and Media Communications 2011 (in conjunction with ICME 2011), best paper finalists in ICME 2011, ICIP 2011 and ICME 2015, best paper runner-up award in ICME 2012 and best student paper award in ICIP 2013. His DL titles are:

- Graph Signal Processing for Image Coding and Restoration
- 3D Image Representation and Coding for Interactive Navigation

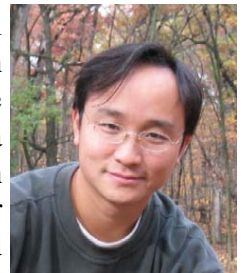
Prof. Chih-Tsung Huang received the Ph.D. degree in electrical engineering from the National Tsing Hua University (NTHU), Hsinchu, Taiwan, in 2000. Since 2004, he has been with the Department of Computer Science, NTHU, where he is currently an Associate Professor. He was a visiting researcher with the ECE Department, University of California, Santa Barbara (UCSB) from 2011 to 2012. He also serves as the Deputy Director of the Design Technology Center (DTC), NTHU, from 2012. His research interests include design, automation and test technologies for multi-core and many-core systems, and robustness VLSI computing, including cryptography designs, error-correcting codecs, and system-level debug and performance monitoring. Dr. Huang has coauthored over 70 technical publications in IEEE journals and conferences. He also holds 13 patents.



Prof. Huang was a recipient of 2014 Outstanding Technology Transfer Award from Ministry of Science and Technology (MOST), Taiwan, ROC. He was also a recipient of Silver Prize of 2009 National Invention Award, Taiwan, ROC. In addition, he received of the Best Paper Award of the 2003 IEEE Asia and South Pacific Design Automation Conference (ASP-DAC) and the Special Feature Award of the 2003 ASP-DAC University LSI Design Contest. He was also a recipient of the 2008 IEEE Computer Society Certificate of Appreciation, TTTC (Test Technology Technical Council) Service Award. He is now a senior member of IEEE. His DL title is:

- Virtual Platform and Prototyping of Many-Core Systems

Prof. Zhu Li is an Associate Professor with the Dept of Computer Science & Electrical Engineering (CSEE) at University of Missouri, Kansas City. He received his PhD in Electrical & Computer Engineering from Northwestern University, Evanston in 2004. He was Sr. Staff Researcher/Sr. Manager with Samsung Research America's Multimedia Standards Research Lab in Dallas, 2012-15, Senior Staff Researcher/Group Lead with FutureWei(Huawei)'s Media Lab in Bridgewater, NJ, from 2010-12, an Assistant Professor with the Dept of Computing, The Hong Kong Polytechnic University from 2008-2010, and



a Principal Staff Research Engineer with the Multimedia Research Lab (MRL), Motorola Labs, Schaumburg, Illinois, from 2000 to 2008.

His research interests include audio-visual analytics and machine learning with its application in large scale video repositories annotation, search and recommendation, as well as video adaptation, source-channel coding and distributed optimization issues of the wireless video networks. He has 30+ issued or pending patents, 90+ publications in book chapters, journals, conference proceedings and standards contributions in these areas. He is an IEEE senior member, elected member of the IEEE Multimedia Signal Processing (MMSP) Technical Committee ,2014-17, elected Vice Chair of the IEEE Multimedia Communication Technical Committee (MMTC) 2008~2010, and Standards Liaison, 2014-16. He is an Associated Editor for IEEE Trans. on Multimedia, IEEE Trans. on Circuits & System for Video Technology, Springer Journal of Signal Processing Systems, co-editor for the Springer-Verlag book on "Intelligent Video Communication: Techniques and Applications". He served on numerous conference and workshop TPCs and is General Co-Chair for IEEE VCIP 2017, was area chair for IEEE ICIP 2015, ICME 2015, and VCIP 2015, symposium co-chair at IEEE ICC'2010, and on the Best Paper Award Committee for IEEE ICME 2010. He received the Best Poster Paper Award from IEEE Int'l Conf on Multimedia & Expo (ICME) at Toronto, 2006, and the Best Paper Award from IEEE Int'l Conf on Image Processing (ICIP) at San Antonio, 2007.

Prof. Jiaying Liu received the B.E. degree in computer science from Northwestern Polytechnic University, Xi'an, China, and the Ph.D. degree with the Best Graduate Honor in computer science from Peking University, Beijing, China, in 2005 and 2010, respectively. She is currently an Associate Professor with the Institute of Computer Science and Technology, Peking University. She has authored or co-authored over 60 papers, and holds 10 granted patents. Her current research interests include image/video processing, computer vision, and video compression.



Dr. Liu was a Visiting Scholar with the University of Southern California, Los Angeles, from 2007 to 2008. Supported by Star Track program, she was a Visiting Researcher at Microsoft Research Asia (MSRA) in 2015. She has also served as TC member in APSIPA IVM since 2015.

She has also engaged in computing education. She has run MOOC courses "C++ Programming" and "Fundamental Algorithm Design" on Coursera/edX/ChineseMOOC. There are more than 30 thousand students enrolled. She also got Peking University Teaching Excellence Award. Her DL titles are:

- Joint Multiplanar Autoregressive and Low-Rank Approach for Image Restoration
- Photo Stylistic Brush: A Robust Style Transfer Approach via Superpixel-Based Bipartite Graph

Prof. Chia-Hung Yeh received his B.S. and Ph.D. degrees from National Chung Cheng University, Taiwan, in 1997 and 2002, respectively, all from the Department of Electrical Engineering. Dr. Yeh joined the Department of Electrical Engineering, National Sun Yat-sen University (NSYSU) as an assistant professor in 2007 and became an associate professor in 2010. In Feb. 2013, Dr. Yeh is promoted to a full professor. Dr. Yeh's research interests include 3D reconstruction, video coding, image/video processing and big data. He served on the associate editor of Journal of Visual Communication and Image Representation, EURASIP Journal on Advances in Signal Processing and APSIPA Transactions on Signal and Information Processing. Dr. Yeh has been an active TC member of IEEE Communication Society on Multimedia Communication and APSIPA. He is also one of founding members of ACM SIGMM Taiwan Chapter. He served as program co-chairs of IEEE Big Data Multimedia 2016, IWAIT&IFMIA 2015, ICS 2014, ICICS 2013, APSIPA 2013, ICS2012 and IEEE ISIC



2012, and co-chaired IEEE-TW 2016/2015, IEEE ICME 2014, CVGIP2012, IEEE PCM2012, VCIP 2012, APSIPA 2012, CVGIP2011 and VCIP 2010. He has been on the best paper award committee of JVCi and APSIPA. Dr. Yeh has co-authored more than 180 technical international conferences and journal papers and held 44 patents in the U.S., Taiwan, and China. Dr. Yeh's research has more than 1000 Google scholar citation number and the h-index is 16. He received the 2007 Young Researcher Award of NSYSU, the 2011 Distinguished Young Engineer Award from the Chinese Institute of Electrical Engineering, the 2013 Distinguished Young Researcher Award of NSYSU, the 2013 IEEE MMSP Top 10% Paper Award, and the 2014 IEEE GCCE Outstanding Poster Award.

Prof. Jiangtao (Gene) Wen received the BS, MS and Ph.D. degrees with honors from Tsinghua University, Beijing, China, in 1992, 1994 and 1996 respectively, all in Electrical Engineering. From 1996 to 1998, he was a Staff Research Fellow at UCLA, where he conducted research on multimedia coding and communications. Many of his inventions were later adopted by international standards such as H.263, MPEG and H.264. After UCLA, he served as the Principal Scientist of PacketVideo Corp. (NASDAQ: WAVE/DCM), the CTO of Morphbium Technology Inc., the Director of Video Codec Technologies of Mobilygen Corp (NASDAQ: MXIM), the Senior Director of Technology of Ortiva Wireless (NASDAQ: ALLT) and consulted for Stretch Inc., Ocarina Networks (NASDAQ: DELL) and QuickFire Networks (NASDAQ: FB). Since 2009, Dr. Wen has held a Professorship at the Department of Computer Science and Technology of Tsinghua University. He was a Visiting Professor at Princeton University in 2010 and 2011.



Dr. Wen was elected a Fellow of the IEEE in 2011. He is the Director of the Research Institute of the Internet of Things of Tsinghua University, and a Co-Director of the Ministry of Education Tsinghua-Microsoft Joint Lab of Multimedia and Networking. His DL title is:

- Multimedia Communication for Emerging Applications

Friend Labs Activities

Friend Labs is one of the recent activities of APSIPA to provide education, research and development exchange platforms for both academia and industry. All APSIPA Friend Labs are listed in the APSIPA website. Each lab has one page to post its information, photos and a link to the home page of the lab. An academia or industrial lab is qualified to become an APSIPA Friend Lab if it has at least 10 current or former lab members who are full or associate members of APSIPA. For more information, please visit <http://www.apsipa.org/friendlab/FriendLabs.htm>.

• Friend Lab Meeting at APSIPA ASC 2015

In APSIPA ASC 2015, there were Friend Lab sessions during the lunchtime in each day. It allowed people to introduce their laboratory, the history, the neighbor environment and some uniqueness of the lab; and also demonstrated some of interesting projects to participants. It has brought people from both sides closer to each other, made more friends, and shared their teaching and research experience. It has also inspired many good suggestions to further promote Friend Lab during the session discussion.



Friend Lab Sessions on Day 1



Friend Lab Sessions on Day 2



Friend Lab Sessions on Day 3

• Reunion of APSIPA Friend Labs in Taiwan

On December 28, 2015, a reunion of APSIPA Friend Labs was organized by Prof. Chia-Hung Yeh in the afternoon in the EE building of NSYSU campus. During the reunion event, Prof. Mark Liao, Prof. Chuan-Yu Chang, Prof. Wu-Chih Hu and Dr. Chao-Yung Hsu shared their experiences on industrial cooperation. Their suggestions to the directors of APSIPA Friend Labs offered great guidelines on how to stand out in competing for industrial projects. The directors of APSIPA Friend Labs came from different parts of Taiwan including Taipei, Taichung, Yunglin, Changhua, Tainan, Kaohsiung, Pingtung and Penghu, which cover the most important area of Taiwan. Many participants gave good feedback and said they benefited a lot from this reunion. In the future, there will be more exchange activities held among the APSIPA Friend Labs.

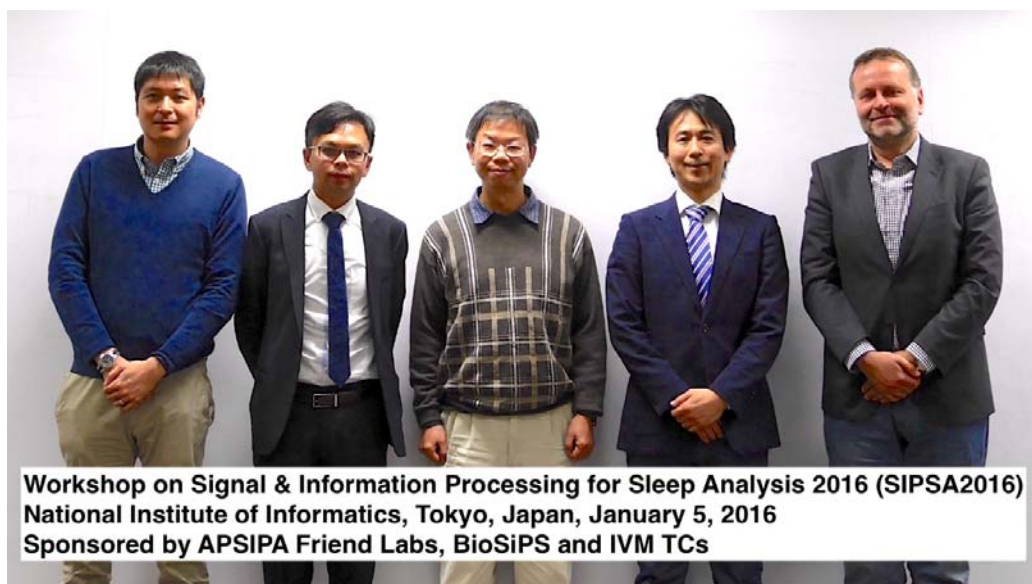




- **First International Workshop on SIPSA 2016**

On January 5, 2016, the First Signal and Information Processing for Sleep Analysis Workshop 2016 (SIPSA2016) was held in Tokyo in National Institute of Informatics (NII). The event is hosted by two Friend Labs from Japan (Multimedia Processing Lab and BCI-lab-group). The workshop is co-sponsored by APSIPA BioSiPS and IVM Technical Committees. The event is organized in order to promote and exchange recent advances of sleep analysis and to provide opportunities of meeting and getting together among researchers in this growing field of research.

Please visit <http://about.bci-lab.info/events/sleep-analysis-workshop-2016> for more information.



Workshop on Signal & Information Processing for Sleep Analysis 2016 (SIPSA2016)
National Institute of Informatics, Tokyo, Japan, January 5, 2016
Sponsored by APSIPA Friend Labs, BioSiPS and IVM TCs

Contribution from Members

The following two pages are about a free Chinese speech database. It is contributed by our members who want to share with other APSIPA members.

A Free 30-hour Chinese Speech Database

Dong Wang, Xuewei Zhang, Zhiyong Zhang

Center for Speech and Language Technologies (CSLT), RIIT, Tsinghua University, Beijing, China

Tsinghua National Laboratory for Information Science and Technology, Beijing, China

wangdong99@mails.tsinghua.edu.cn; {zxw,zhangzy}@cslt.riit.tsinghua.edu.cn

In this newsletter, we introduce THCHS-30 (Tsinghua Chinese 30-hour database), a free Chinese speech database for automatic speech recognition (ASR) research. The database was published by the Center for Speech and Language Technologies (CSLT) at Tsinghua University. Our release involves speech data, language models and lexicons, as well as the corresponding Kaldi-based recipe that can be used to construct a baseline Chinese ASR system.

I. WHY PUBLISH THE DATABASE

Database is highly important for speech recognition. Due to the complex patterns within human speech, the ASR research requires large amounts of speech data to train robust acoustic models. There have been many ‘standard’ databases, among which several famous ones are the TIMIT database [1], the WSJ database [2], the Switchboard database [3], the RAS 863 corpus [4] (for Chinese). These databases have been widely used to build baseline systems and verify new algorithms. However, most of them are costly and are not affordable for many individual researchers. This has impeded the initial interest of students and young researchers towards speech research. We support the public data movement and hold the idea that free speech data will provide valuable resources for potential researchers to start their first step in the exciting ASR research field.

II. WHAT WE HAVE PUBLISHED

The THCHS-30 speech database was recorded in 2000 - 2001 by Dr. Dong Wang when he was a master student at the department of computer science, Tsinghua University, supervised by Prof. Xiaoyan Zhu. The database was originally named as TCMSD (Tsinghua Continuous Mandarin Speech Database) [5], and the name was changed to THCHS-30 when it was published 10 years later, to respect the name convention of the CSLT open data series¹.

A. Audio data and transcriptions

THCHS-30 involves about 30 hours of speech signals recorded by a single carbon microphone at the condition of silent office. There are 40 people participating the recording. Most of the participants are young colleague students, and all are fluent in standard Mandarin. The sampling rate of the recording is 16,000 Hz, and the sample size is 16 bits.

The transcriptions are provided in word level, syllable level and phone level. The entire database involves four individual subsets, and participants in the same subset record the same 500 sentences. We divide the database into a training set, a development set and a test set. The training set involves subset A, B and C by 30 people, amounting to 10,000 utterances. The development set involves nearly 900 utterances spoken by the same people in the same subsets as the training set. The test set involves the recordings of subset D, amounting to 2495 utterances spoken by 10 people. More details are in [6].

B. Language model and lexicon

We release a word-based tri-gram language model (LM) and a phone-based tri-gram LM to support the word and phone decoding tasks respectively. The word-based LM involves 48,000 words and the phone LM involves 218 Chinese tonal final-initials. The associated lexica are provided as part of the release.

C. Recipe

To demonstrate how to build a baseline ASR system using THCHS-30, a recipe was released with the Kaldi toolkit. The recipe is similar to the WSJ s5 recipe using GPU, with a few modifications to support phone-based decoding and noisy training. The baseline results are also published. Update the Kaldi to the latest snapshot, and the THCHS-30 recipe is in `egs/thchs30`. With this recipe and the associated free resources, a full-fledged Chinese ASR system can be constructed from scratch.

¹<http://www.cslt.org/resources.php?Public/%20data>

III. WHERE TO DOWNLOAD

We publish two versions of THCHS-30: the ‘openslr version’ which is easily used by the Kaldi toolkit, and the ‘standalone version’ which contains the same content but in a slightly different format. If you work on other toolkits (e.g., HTK, Sphinx), the standalone version is probably more appropriate.

The data can be downloaded freely from the following links:

- * Openslr version: <http://www.openslr.org/18/>
- * Standalone version: <http://data.csllt.org/thchs30/standalone.html>

The above links are from our own web server at Tsinghua University, which may be unstable and slow for some connections. The mirrors in the public cloud disks can be used as a backup (and actually more recommended):

- * Openslr: <http://www.openslr.org/18/>
- * Mega: [https://mega.nz/#F!idRSjL4A!cnCY0R2NjU77Jr0soe9OgQ\\$](https://mega.nz/#F!idRSjL4A!cnCY0R2NjU77Jr0soe9OgQ$)
- * Baidu: [http://pan.baidu.com/s/\\$1hqKwE00\\$](http://pan.baidu.com/s/$1hqKwE00$)

IV. CALL FOR CHALLENGE

We call for challenge based on THCHS-30. Two tasks are focused at present, one is based on the original clean data (CLEAN TEST), and the other is based on very noisy data where the SNR is 0db (0DB TEST). Details can be found in the challenge web page <http://data.csllt.org/thchs30/challenges/asr.html>.

The baseline results we have obtained are based on the deep neural network (DNN) model trained with the minimum phone error (MPE) criterion [7], plus the deep auto encoder (DAE) model for the 0DB TEST [8]. The DAE training has been checked in as part of the Kaldi thchs30 recipe. Any improvement reported by any researchers will be released in the challenge web page.

REFERENCES

- [1] C. Lopes and F. Perdigão, *Phoneme Recognition on the TIMIT Database*. Speech Technologies, 2011.
- [2] D. Paul and J. Baker, “The design of wall street journal-based CSR corpus,” *Proceedings of the International Conference on Spoken Language Systems (ICSLP)*, pp. 899–902, 1992.
- [3] J. Godfrey, E. Holliman, and J. McDaniel, “SWITCHBOARD: telephone speech corpus for research and development,” in *Acoustics, Speech, and Signal Processing, 1992. ICASSP-92., 1992 IEEE International Conference on*, vol. 1, Mar 1992, pp. 517–520 vol.1.
- [4] A. Li, Z. Yin, T. Wang, Q. Fang, and F. Hu, “RASC863- A Chinese speech corpus with four regional accents,” *ICSLT-o-COCOSDA, New Delhi, India*, 2004.
- [5] D. Wang, D. Wu, and X. Zhu, “TCMSD: A new Chinese continuous speech database,” in *International Conference on Chinese Computing (ICCC01)*, 2001., 2001. [Online]. Available: http://csllt.rtiit.tsinghua.edu.cn:8081/data/thuch30/paper/tcmsd_camera.pdf
- [6] Z. Z. Dong Wang, Xuewei Zhang, “THCHS-30: A free Chinese speech corpus,” 2015. [Online]. Available: <http://arxiv.org/abs/1512.01882>
- [7] X. He, L. Deng, and W. Chou, “Discriminative learning in sequential pattern recognition,” *IEEE SIGNAL PROCESSING MAGAZINE*, pp. 14–36, 2008.
- [8] D. Yu and L. Deng, *Automatic Speech Recognition: A Deep Learning Approach*. Springer, 2015.

APSIPA Who's Who

President: Haizhou Li, Institute for Infocomm Research, A*STAR, Singapore

President-Elect: Wan-Chi Siu, The Hong Kong Polytechnic University, Hong Kong

Past President: C.-C. Jay Kuo, University of Southern California, USA

VP - Conferences: Thomas Fang Zheng, Tsinghua University, China

VP - Industrial Relations and Development: Shan Liu, MediaTek, USA

VP - Institutional Relations and Education Program:

Yo-Sung Ho, Gwangju Institute of Science and Technology, Korea

VP - Member Relations and Development: Kenneth Lam, The Hong Kong Polytechnic University, Hong Kong

VP - Publications: Tatsuya Kawahara, Kyoto University, Japan

VP - Technical Activities: Anthony Kuh, University of Hawaii at Manoa, USA

Members-at-Large:

Waleed H. Abdulla, The University of Auckland, New Zealand

Mrityunjoy Chakraborty, Indian Institute of Technology, India

Kosin Chamnongthai, King Mongkut's University of Technology Thonburi, Thailand

Homer Chen, National Taiwan University, Taiwan

Woon-Seng Gan, Nanyang Technological University, Singapore

Wen Gao, Peking University, China

Hsueh-Ming Hang, National Chiao-Tung University, Taiwan

Yoshinobu Kajikawa, Kansai University, Japan

K.J. Ray Liu, University of Maryland, USA

Ming-Ting Sun, University of Washington, USA

Kazyua Takeda, Nagoya University, Japan

Toshihisa Tanaka, Tokyo University of Agriculture and Technology, Japan

Headquarters

Address:

Asia Pacific Signal and Information Processing Association,
Centre for Signal Processing,
Department of Electronic and Information Engineering,
The Hong Kong Polytechnic University,
Hung Hom, Kowloon, Hong Kong.

Officers:

Director: Wan-Chi Siu, email: enwcsiu@polyu.edu.hk

Manager: Kin-Man Lam, Kenneth,

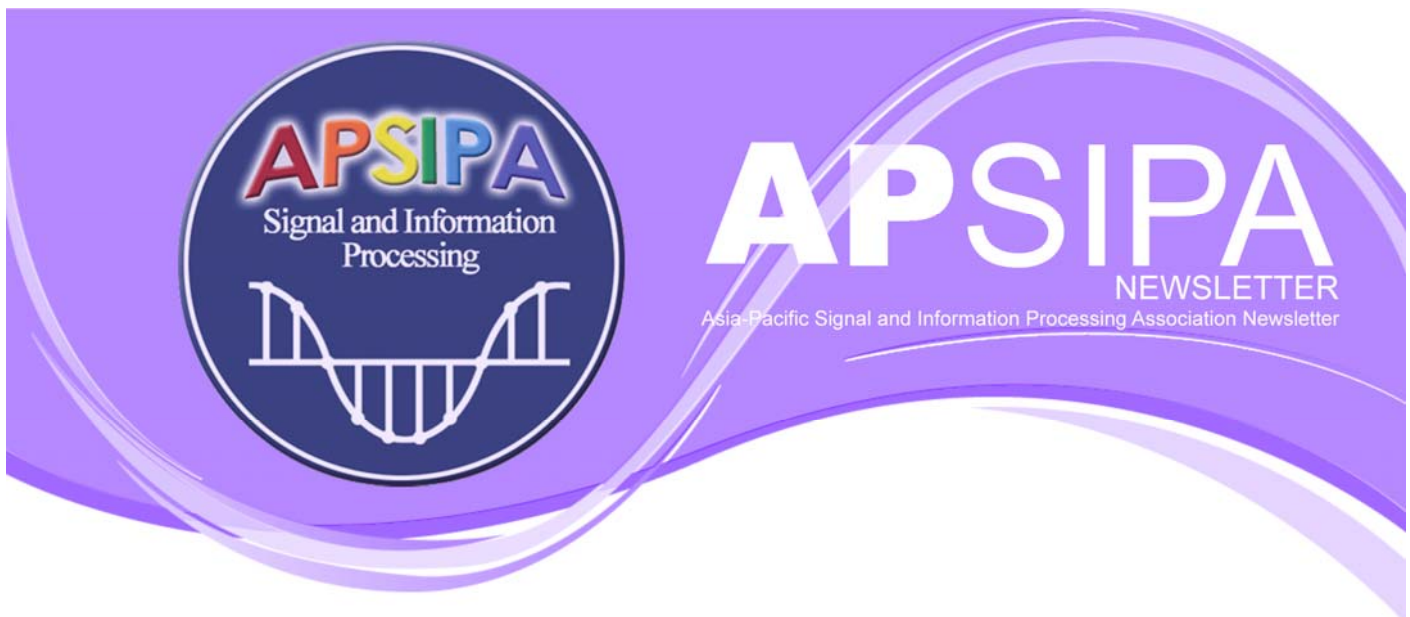
email: enkmklam@polyu.edu.hk

Secretary: Ngai-Fong Law, Bonnie,

email: ennflaw@polyu.edu.hk

Treasurer: Yuk-Hee Chan, Chris,

email: enyhchan@polyu.edu.hk



• APSIPA Newsletter Editorial Board Members

Bonnie Law (Editor-in-Chief), The Hong Kong Polytechnic University, Hong Kong.

Eliathamby Ambikairajah, University of New South Wales, Australia

Yoshinobu Kajikawa, Kansai University, Japan

Kenneth Lam, The Hong Kong Polytechnic University, Hong Kong

Xie Lei, Northwestern Polytechnical University, China

Thomas Zheng, Tsinghua University, China

Are you an APSIPA member?

If not, then register online at

<http://www.apsipa.org>

More members to come!