

President's Message

The Asia-Pacific region is the fastest growing economic region in the world, where a large number of researchers, engineers, educators, and students are working in the field of information technology. Driven by the vision to establish an international organization that fosters interaction and collaboration on research and education in this region, the Asia-Pacific Signal and Information Processing Association (APSIPA) was founded on October 5, 2009.

APSIPA is a non-profit organization covering research of all aspects of signals and information, including processing, recognition, classification, communications, networking, computing, system design, security, implementation, and technology with applications to scientific, engineering, health, and social areas. The mission of APSIPA has the following five aspects:

- Providing education, research and development exchange platforms for both academia and industry.
- Organizing common-interest activities for researchers and practitioners.
- Facilitating collaboration with region-specific focuses and promoting leadership for worldwide events.
- Disseminating research results and educational material via publications, presentations, and electronic media.
- Offering professional career opportunities with development information and networking.

Dr. Sadaoki Furui, Professor of Tokyo Institute of Technology, was the Founding President of APSIPA (2009-2012). Under his visionary leadership over the last 3 years, APSIPA has built a solid foundation with a core community of members and rich activities as listed below.

- Four annual conferences were successfully held in Sapporo, Japan (2009), Singapore (2010), Xian, China (2011) and Hollywood, USA (2012). The number of attendees has steadily increased from 250 in 2009 to 400 in 2012.
- APSIPA launched an open-access journal "APSIPA Transactions on Signal and Information Processing"

published by the Cambridge University Press in 2012.

- APSIPA started a Distinguished Lecturer Program (DLP) with 10 selected Distinguished Lecturers in 2012.
- APSIPA published two newsletters in 2012.
- APSIPA established the APSIPA Social Network to promote interaction via modern social networking tools.



It is truly amazing to see the rapid development of APSIPA within a short span of three years. We are obliged to all people that have contributed their time and effort to make APSIPA a great success. It is my great honour and responsibility to succeed Dr. Furui and serve as the 2nd President of APSIPA from 2013-2014. In addition to the continual build-up of the APSIPA Annual Summit and Conference (ASC), Transactions, DLP, Newsletters, and Social Network, I would like to focus on two new initiatives:

- A major recruiting drive for more new APSIPA members, and
- Institutional partnership with local engineering societies in various countries, academic or corporate research labs, etc.

I am confident that APSIPA will continue to grow rapidly in a healthy manner if it knows and can meet the need of the signal and information processing R&D community. I look forward to working closely with all of you, and your feedback comments are very welcome.

C.-C. Jay Kuo

In this issue:

Brief Report on APSIPA ASC 2012	Page 2
The First APSIPA Workshop on BioSiPS	Page 4
APSIPA ASC 2013 Call for Paper	Page 5
Speech Decoding Using Lattice Rescoring.....	Page 7
APSIPA ASC 2012 Interviews	Page 9

Brief Report on APSIPA ASC 2012

The APSIPA Annual Summit and Conference (ASC) 2012 was held in Hollywood, California, USA, from December 3-6, 2012. It was the fourth APSIPA annual conference, yet the first one in the North America continent. Although the venue was geographically far away from most countries in the Asia Pacific rim, the conference had a record high attendance number, which was slightly over 400.

Paper submission and presentation were organized in 6 separate tracks, corresponding to the technical areas covered by 6 APSIPA technical committees. Among them, the Speech, Language and Audio (SLA) tract and the Image, Video and Multimedia (IVM) tract attracted the largest numbers of submissions. For the first time, we got the technical sponsorship from the IEEE Signal Processing Society, and all accepted papers are accessible via IEEEXplore.

The technical program included 8 tutorial sessions, 3 keynote speeches, 2 panel discussion sessions (on the new APSIPA transactions and on guidance to high quality research), one forum discussion session (on the interaction of academia and industry), together with 54 oral sessions and 6 poster sessions. Three best awards were granted in the conference banquet. They are:

- The Best Paper Award (Long Paper Category): Ernest Kurniawan, Stefano Rini and Andrea Goldsmith, "Energy Efficient Cooperation for Two-Hop Relay Networks"
- The Best Paper Award (Short Paper in Regular Session Category): Hironori Doi, Tomoki Toda, Tomoyasu Nakano, Masataka Goto and Satoshi Nakamura, "Singing Voice Conversion Method Based on Many-to-Many Eigenvoice Conversion and Training Data Generation Using A Singing-to-Singing Synthesis System"

The Best Paper Award (Short Paper in Special Session Category): Zhizheng Wu, Tomi Kinnunen, Eng Siong Chng, Haizhou Li and Eliathamby Ambikairajah, "A Study on Spoofing Attack in State-of-The-Art Speaker Verification: the Telephone Speech Case"

The social program included a welcome reception, a conference banquet and a presentation of the IRIS show by Cirque du Soleil performed at the Dolby Theater. IRIS explores the different techniques of cinema, as it evolves from black and white to color in a world of shadows and light. The story unfolds as our two young heroes venture through a universe that brings to life a succession of cinematic genres, reawakening the limitless potential of this art form.

Hollywood is the heart of the American motion picture industry and home to the stars and to some of the most recognizable attractions in the world. Attendees enjoyed this environment very much, walking among the "stars" on the Hollywood Walk of Fame and using the camera to capture the



world famous Hollywood sign and attractions such as hand/footprints in the cement courtyard of the Chinese Theatre, the Kodak Theatre, Madame Tussaud's and more. A large number of interview sessions were conducted during the conference. Leaders in the field of signal and information processing shared their valuable experience with young researchers. There is a companion article in this newsletter will provide more details on these interview sessions.

APSIPA ASC 2012 was concluded at the noon of Dec. 6. We welcome your contributions to APSIPA ASC 2013, which will be held in KaoHsiung, Taiwan, from Oct. 29 to Nov. 1, 2013. Look forward to seeing old as well as new friends there.



APSIPA Transactions on Signal and Information Processing



APSIPA Transactions on Signal and Information Processing

The journal serves as an international forum for signal and information processing researchers across a broad spectrum of research, ranging from traditional modalities of signal processing to emerging areas where either (i) processing reaches higher semantic levels (e.g., from speech recognition to multimodal human behavior recognition) or (ii) processing is meant to extract information from datasets that are not traditionally considered signals (e.g., mining of Internet or sensor information).

APSIPA Transactions on Signal and Information Processing is an Open Access, e-journal launched in partnership between the Asia-Pacific Signal and Information Processing Association (APSIPA) and Cambridge University Press.

If you have any questions about the journal, please direct them to the Editor-in-Chief, Professor Antonio Ortega, University of Southern California, antonio.ortega@sipi.usc.edu. An interview with Professor Ortega regarding this journal can be accessed from [\[Link-1\]](#); [\[Link-2 for China\]](#). The published articles can be freely accessed and downloaded through the link

<http://journals.cambridge.org/action/displayJournal?jid=SIP>



The First APSIPA International Workshop on Biomedical Signal Processing and Systems (BioSiPS)

The First APSIPA International Workshop on Biomedical Signal Processing and Systems (BioSiPS) is organized by the APSIPA BioSiPS Technical Committee (TC) members. The main goal of this workshop is to strengthen the collaboration among the technical committee members and the invited guests or possible TC member candidates. The agenda of this workshop includes 1) to come up with the plan for increasing the number of papers both in the normal sessions and the special sessions for BioSiPS, 2) to approve the candidate for being the BioSiPS TC members, 3) to finalize the 3-year plan for introducing the APSIPA society to the world-class signal processing communities and the related fields, 4) to initiate the APSIPA student exchange program among the TC members of BioSiPS.



This year, the workshop will be held during the 28th -30th March, 2013, at the Learning Center, Mahidol University, Bangkok, Thailand. Mahidol University is the largest medical-oriented university in Thailand. Hence, the organizing committee also invites the special guest, Prof. Sorayouth Chumnanvej, MD, the neurosurgeon from the Faculty of Medicine Ramathibodi Hospital, Mahidol University, to introduce the **clinical trial** facilities in Thailand for enhancing the international collaboration among the TC members as well as to bring in the emerging researches in biomedical signal processing and systems for the **intraoperative monitoring and neurosurgery**. Besides the presentation among all TC members and the invited guests, the technical tours to the following places will be provided together with the Thai cultural tour.

1. Brain-Computer Interface Lab, Smart Motion Analysis Lab, Center for Biomedical and Robotics Technology, Department of Biomedical Engineering, Faculty of Engineering, Mahidol University,
2. Department of Neurosurgery, Faculty of Medicine, Ramathibodi Hospital, Mahidol University,

The speakers and topics can be summarized as follows:

1. Trends on Brain-Computer Interface for Preventive Technology, Treatment, and Rehabilitation in Thailand by Dr. Yodchanan Wongsawat, Mahidol University, Thailand
2. Tactile BCI - State of the Art and Future Challenges by Dr. Tomasz M. Rutkowski, University of Tsukuba, Japan
3. Advanced Signal Processing for Brain-Computer Interface by Dr. Toshihisa Tanaka, Tokyo University of Agriculture and Technology, Japan
4. Complexity and Energy Analysis Methods for the Real World Recorded EEG Signals by Dr. Jianting Cao, Saitama Institute of Technology, Japan
5. Grassmannian Representation for Variational Pattern Classification and Its Application to Brain Signal Processing by Dr. Yoshikazu Washizawa, University of Electro-Communications, Japan
6. How do artists observe abstract paintings? by Dr. Kazushi Ikeda, Nara Institute of Science and Technology, Japan
7. Heart Rate Variability Analysis for Epileptic Seizure Prediction by Dr. Koichi Fujiwara, Kyoto University, Japan
8. Signal Processing for MRI by Dr. Yuttapong Jiraksopakun, KMUTT, Thailand
9. Signal Processing Research for Intraoperative Monitoring by Dr. Sorayouth Chumnanvej, Mahidol University, Thailand.

For further information, please visit the workshop website at

http://www.tara.tsukuba.ac.jp/~tomek/workshops/APSIPA_bioSPS2013/

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Call for Papers

Welcome to the APSIPA Annual Summit and Conference 2013 located in the Kaohsiung. It is the second largest city in Taiwan. The city's tourist attractions are located close to the harbor area. Just north of the harbor, Shoushan, or Monkey Mountain, has hiking trails that provide beautiful views of the city, and National Sun Yat-sen University is also inside the area. Kaohsiung always allows people to feel cozy and relaxed while bringing endless pleasant surprises at the same time. Kaohsiung residents, who are zealous and hospitable, like to keep their houses neat and tidy in order to warmly entertain their friends. When you enter Kaohsiung from the airport, station, highway, or harbor, you can always feel excited. What a sparkling city! Numerous modernized tall buildings, straight and clean roadways, and a green atmosphere seem to open a gate of grandeur and welcome visitors from everywhere.

APSIPA ASC 2013 will be the fifth annual conference organized by Asia-Pacific Signal and Information Processing Association (APSIPA). Founded in 2009, APSIPA aims to promote research and education on signal processing, information technology and communications. The annual conference was previously held in Japan (2009), Singapore (2010), China (2011), and USA (2012). The field of interest of APSIPA concerns all aspects of signals and information including processing, recognition, classification, communications, networking, computing, system design, security, implementation, and technology with applications to scientific, engineering, and social areas. **Accepted papers in regular sessions and in special sessions will be published in APSIPA ASC 2013 proceedings which will be indexed by EI Compendex.**

The regular technical program tracks and topics of interest include (but not limited to):

1. **Biomedical Signal Processing and Systems (BioSiPS)**
 - 1.1 Biomedical Signal and Information: Theory and Methods
 - 1.2 Medical Information and Telecare Systems
 - 1.3 Neural Systems and Applications
 - 1.4 Bio-inspired Signal Processing and System
 - 1.5 Biomedical Circuits and Systems
2. **Signal Processing Systems: Design and Implementation (SPS)**
 - 2.1 Nanoelectronics and Gigascale systems
 - 2.2 VLSI systems and Applications
 - 2.3 Embedded Systems
 - 2.4 3D Video Processing and Coding
 - 2.5 High Efficiency Video Coding
3. **Image, Video, and Multimedia (IVM)**
 - 3.1 Image/Video Processing, Coding and Analysis
 - 3.2 Image/Video Storage, Retrieval and Authentication
 - 3.3 Computer Vision and Graphics
 - 3.4 Multimedia Systems and Applications
4. **Speech, Language, and Audio (SLA)**
 - 4.1 Audio Processing
 - 4.2 Speech Information Processing: Recognition, Synthesis, Understanding, and Translation
 - 4.3 Natural Language Processing: Language Modeling, Natural Language Generation/Understanding, Machine Translation
5. **Signal and Information Processing Theory and Methods (SIPTM)**
 - 5.1 Modern Signal Processing Theory and Method
 - 5.2 Detection and Parameter Estimation
 - 5.3 Array Processing and Multi-channels
 - 5.4 Signal and Information Processing in Applications
6. **Wireless Communications and Networking (WCN)**
 - 6.1 Information and Network Security
 - 6.2 Wireless Communications and Networking
 - 6.3 Standards and Emerging Technology
 - 6.4 RF and Antennas

Submission of Papers: 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 for poster presentation.

Organizer: National Sun Yat-sen University

Academic Sponsor: Asia-Pacific Signal and Information Processing Association

Important Dates

Submission of Proposals for Special Sessions, Forum, Panel & Tutorial Sessions	Apr. 10, 2013
Submission of Full and Short Papers	May 10, 2013
Submission of Papers in Special Sessions	June 10, 2013
Notification of Papers Acceptance	July 30, 2013
Submission of Camera Ready Papers	Aug. 30, 2013
Author Registration Deadline	Aug. 30, 2013
Tutorial Session Date	Oct. 29, 2013
Summit and Conference Dates	Oct. 30 ~ Nov. 1, 2013

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IEEE
Signal Processing Society

APSIPA in Quick!

APSIPA Mission: To promote broad spectrum of research and education activities in signal and information processing in Asia Pacific.

APSIPA Conferences: APSIPA Annual Summit and Conference.

APSIPA Publications: Transactions on Signal and Information Processing in partnership with Cambridge Journals since 2012; APSIPA Newsletters.

APSIPA Social Network: To link members together and to disseminate valuable information more effectively.

APSIPA Distinguished Lectures: An APSIPA educational initiative to reach out to the community.

NEWS

ChinaSIP is a new initiative launched by the IEEE Signal Processing Society (SPS). With the first China Summit and Conference planned for Beijing on 6-10 July 2013, the goal of ChinaSIP is to provide a platform to engage colleagues working in the signal and information processing field in China, by building and broad a technical community with domestic and international colleagues, providing a ladder to further advance China's signal/information processing professionals on the global stage, and offering global colleagues opportunities to network and develop international collaborations. Please refer to ChinaSIP 2013 official website <<http://www.chinasip2013.org/>> for more and latest information.

Elected APSIPA Distinguished Lecturers – 2013

Nominee	Email	Nominee Affiliation
Adachi, Fumiyuki	adachi@ecei.tohoku.ac.jp	Tohoku University
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Tanimoto, Masayuki	tanimoto@nagoya-u.jp	Nagoya Industrial Science Research Institute
Wu, Chung-Hsien	chunghsienwu@gmail.com	National Cheng Kung University

Upcoming APSIPA Distinguished Lecturer Program

Speaker: Hsueh-Ming Hang, National Chiao Tung University, Hsinchu, Taiwan

Title: What's Next on Video Coding Technologies and Standards?

Time: 14:15-15:15; 21 March 2013 (Thursday)

Venue: Auditorium, Engineering Technology College, Can Tho University, Cantho City, Vietnam
Chair/Host person: Dr. Truong Chi Thanh

Speaker: Hsueh-Ming Hang, National Chiao Tung University, Hsinchu, Taiwan

Title: What's Next on Video Coding Technologies and Standards?

Time: 8:30-9:30; 19 March 2013 (Tuesday)

Venue: Room 803, Building B1, Hanoi Univ. of Science & Technology, Hanoi City, Vietnam
Chair/Host person: Dr. Nguyen Linh Giang

Speech Decoding Using Lattice Rescoring

Abdelaziz A. Abdelhamid and Waleed H. Abdulla

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The goal of automatic speech recognition (ASR) is to decode spoken utterances, by machine, to uncover their information content. Therefore, ASR is also called speech decoding. Over the last seven decades, Tremendous research efforts emerged competing together to achieve this goal in a real-time accurate way. One of the promising approaches to achieve that goal is lattice rescoring. Several knowledge sources are usually incorporated in the speech decoding process, such as acoustic, language and lexical models that are integrated together into a recognition network (also called decoding graph). Currently, the common approach usually followed in building this recognition network is weighted finite-state transducer (WFST) [1]. The speech decoding process can be performed based in either single-pass or multi-pass approach. The lattice rescoring is a form of multi-pass decoding, in which the lattice is generated in the first pass using simple and low order knowledge sources and the rescoring is performed in the second pass using higher order knowledge sources.

WFST and speech decoding

Currently, WFST is adopted as the best unified approach for integrating speech knowledge sources into one decoding graph [1]. This is due to the efficiency of the WFST operations in building compact graphs convenient for existing decoding algorithms, such as Viterbi algorithm. The WFST is defined as a set of states and transitions, where each transition carries an input symbol (i.e., context-dependent phoneme), output symbol (i.e., word) and a weight (i.e., natural log of a language model probability). When applying the Viterbi algorithm to a WFST, the result can be either a single-best decoding hypothesis (single sequence of words) or N-best hypotheses. To output these N-best hypotheses in a rich format, we usually group them together in a graph called lattice. The algorithm that is commonly used to generate these hypotheses is the Viterbi beam pruning which is usually implemented in the form of token passing mechanism, as shown in Fig. 1. In this figure, the decoding network is navigated through a propagation of a set of tokens, and at each point of the navigation process the acoustic and language model scores are calculated and accumulated in the corresponding token. During the decoding process, each active transition has an associated token for storing the decoding score up to this transition, and at the end of the decoding process, the last set of tokens are compared with respect to the accumulated scores at each token, then the N-best tokens (carrying highest scores) are selected. To generate a lattice during decoding, a separate data structure can be used to store the set of transitions the tokens passed over during the decoding process.

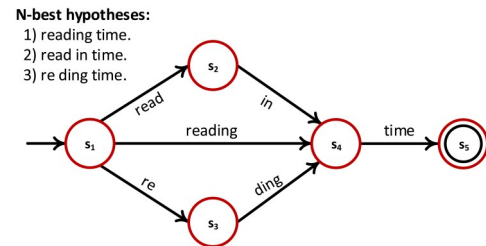


Fig. 1. Lattice form containing three decoding hypotheses. For simplicity, phone sequences and transition weights of each word are omitted. Double circles refer

Lattice form

A lattice is defined as a weighted, labelled and directed acyclic graph generated from a single-pass decoding using simple knowledge sources, to represent a set of N-best decoding hypotheses. The lattice should have a path for every word sequence in N-best hypotheses within the limits of the search space determined by beam pruning. Also, the lattice should not contain duplicate paths with the same word sequence. In addition, the scores and alignments in the lattice should correspond to the actual paths in the search space. A sample word lattice is depicted in Fig. 1 containing three decoding hypotheses. In this figure, there is no redundant transitions or paths. Although the actual lattice generated from speech recognition applications may contain redundant states and transition, this redundancy can be avoided by applying a set of WFST operations such as defeminisation and pruning [2].

Lattice generation approaches

Despite the common steps shared by various lattice generation approaches, these approaches tend to be closely related to the design of the speech decoder. Some decoders are based on generating different virtual copies of the lexical tree of each preceding word during the search process. In these decoders, it is sufficient to store a single Viterbi back pointer at the word level. The lattice can then be generated using a set of back pointers. According to the word-pair assumption of [3], the time boundary between a pair of words is not affected by the identity of any earlier words in the decoding hypothesis. Practically, the decoders based on this approach cannot be used to assert the assumption presented in [3], thereby there might be no problems in the generated lattice. However, this approach is not applicable to WFST-based speech decoders. On the other hand, the authors in [4] proposed a lattice generation method applicable to WFST-based decoders. In that method, the input decoding graph is expanded to the level of context-dependent phonemes. While navigating the search space, a single Viterbi back

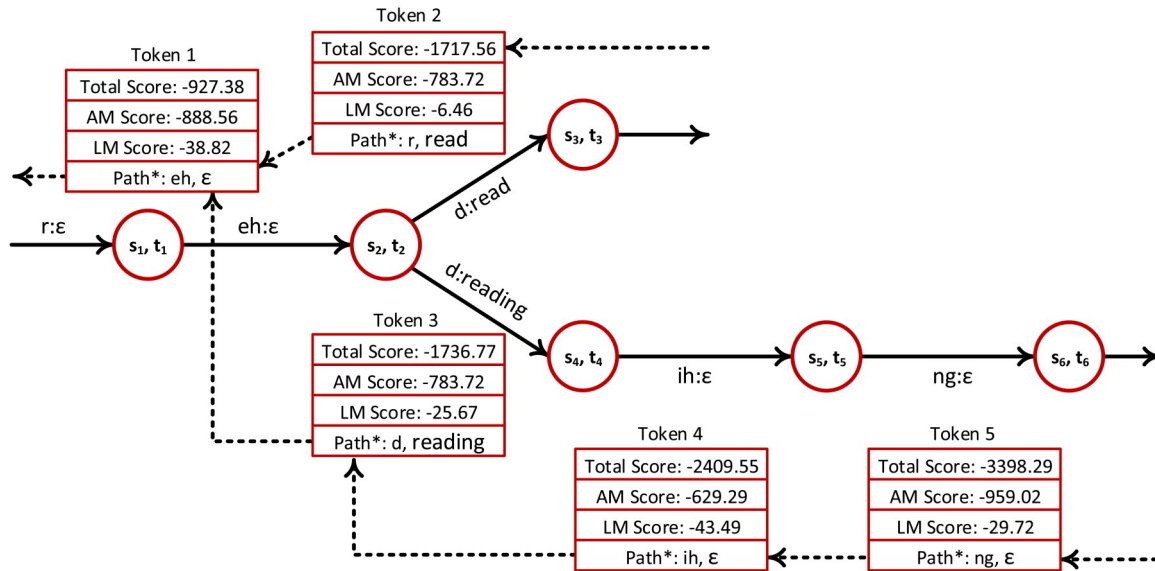


Fig. 2. Procedure of token passing with sample acoustic (AM Score) and language (LM Score) likelihoods. Total Score refers to the sum of the acoustic and language scores. Path* refers to a back pointer to the previous token generated in the decoding process. Dotted arrows refer to the back-pointer links.

pointer is stored to create the lattice at the end of the decoding process. It worth noting that, lattice generation goes through several steps such as pruning, removing empty symbols and defeminisation, to get the final lattice. Another lattice generation method is presented in [5] for WFST-based decoders. However, this method deals with a decoding graph expanded to the acoustic models (i.e., Hidden Markov models (HMMs)) level. In this method, the scores as well as the HMM-state level information are stored at each token. Also, Viterbi back pointers are stored to generate the word lattice, as shown in Fig. 2. However, from the perspective of locating word boundaries in the generated lattice, which is important for some applications such as spoken term detection and spoken document retrieval, WFST-based lattice generation methods need some modifications to be able to locate the boundaries of the words of the generated lattice. Authors in [6] proposed a lexicon matching algorithm based on token passing to accurately locate the word boundaries in the generated lattice.

Lattice rescoring approaches

Basically, lattice rescoring refers to a second pass of speech decoding which is performed in terms of the lattice, generated from the first decoding pass, with the help of high order knowledge sources (i.e., 3-gram or 4-gram language models). An important step to be applied before lattice rescoring is decoupling the scores of acoustic and language models of the transitions of the generated lattice. In other words, we keep only the acoustic scores in the lattice before rescoring. This step is necessary as the rescoring process is performed in terms of higher order language models which are different from those used in the first decoding pass. There are several approaches presented in the literature handling the lattice rescoring. These approaches are based on either offline or on the fly composition. In

both approaches, the generated lattice is composed with high order language models to generate a new compact search space for speech decoding. The on-the-fly rescoring is usually based on an on-the-fly composition method such as [7] and [8]. In comparison with conventional single pass decoding, the lattice rescoring method can achieve better results, but it requires high order knowledge sources.

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APSIPA ASC 2012 Interviews

1. **Professor Thomas Fang Zheng:** In this interview Professor Thomas Fang Zheng introduced the challenging topics he's currently working on. Particularly, he compared natural language processing challenges for Chinese and English language. Finally, he shared his experience on how to do good research and give valuable suggestions for younger generation researchers. [[Youtube link](#)] [[Youku link](#)]
2. **Professor Sadaoki Furui:** In this interview, Prof. Sadaoki Furui talked about his conceives and vision for APSIPA and APSIPA social network. He also introduced his research topics and shared his view of the further development and applications of Automatic Speech Recognition (ASR). He shared his experience on doing research, and provided some valuable suggestions for the younger generation researchers. [[Youtube link](#)] [[Youku link](#)]
3. **Professor Hsueh-Ming Hang :** In this interview, Dr. Hang shares his interesting experience of the competition in international video standard after having been actively participating in the development of technologies for H.261/263 and MPEG-1/2/4/21 in the past 20 years. He also talks about how the 7-year working experience in AT&T Bell Laboratory shapes his research manner. Finally, Dr. Hang shares his expectations of research with young students and junior researchers. [[Youtube link](#)] [[Youku link](#)]
4. **Professor Oscar Au :** In this interview, He introduced his research lab. Then he provided some suggestions on how to apply a research grant and how to write high quality papers. Finally, he further shared with us the experiences in selecting PhD. Students and how to choose research topics for them. [[Youtube link](#)] [[Youku link](#)]
5. **Professor Hong-Yuan Mark Liao :** In this interview, Prof. Liao talked about his determination to change his major from Physics to Electrical Engineering, and explained his preference to team work. In addition, Prof. Liao shared his experiences on time management. At last, he concluded the top three characteristics to be an outstanding professor or researcher from his prospective. [[Youtube link](#)] [[Youku link](#)]
6. **Professor Ming-Ting Sun:** In this interview, He firstly introduced his research lab and the next generation video coding. Then he shared with us his experience on the characteristics to be an outstanding professor, how to write high quality papers and how to manage the balance between editor duties and research. Finally, he introduced his experience in cultivating good students. [[Youtube link](#)] [[Youku link](#)]
7. **Professor Homer Chen :** In this interview, He firstly introduced his research lab and emotion based music accompaniment system in his recent research work. Then he provided some suggestions on choose a good career path, academia or industry job, how to manage time and be an efficient researcher, and how to write high quality papers. Finally, he further shared with us the experiences in how to prepare for a presentation, and how to choose research topics for junior Ph.D. student. [[Youtube link](#)] [[Youku link](#)]
8. **Professor Anil K. Jain :** In this interview, Professor Jain highlights how biometrics research and its applications have evolved over time. For the benefit of young scientists and students, he shared his experiences on how to choose research problems, publish high quality papers, and demands of career in academia vs. industry. Finally, he offered his perspectives on trends in computer vision, face recognition and pattern recognition over the next ten years. [[Youtube link](#)] [[Youku link](#)]
9. **Professor Anthony Kuh:** In this interview Professor Anthony Kuh firstly introduced the challenging topics he's currently working on. Then, he envisioned the future trends in the field of signal and information processing. Finally, he shared his opinions on how to prepare for an academic career for younger generation researchers. [[Youtube link](#)] [[Youku link](#)]

10. **Professor Yoshikazu Miyanaga:** In this interview, Dr. Miyanaga discussed about his academia career, which is started in 1980's, and how he handles to do different research topics. He highlights the qualities that shapes the successful research during the academia career and provides advices for young researchers to develop their academia career. [[Youtube link](#)] [[Youku link](#)]
11. **Professor Kenneth K. M. Lam :** In this interview, Dr. Lam discusses the features and advantages of western education in his education programs at different places. He also shares the experience with IBM Australia Research Student Project Prize when he was pursuing Ph.D. degree in Australia. Moreover, the difference between cultivating Ph.D. students during research work and training the students during the courses is carefully explained. [[Youtube link](#)] [[Youku link](#)]
12. **Professor Hitoshi Kiya:** In this interview, Dr. Hitoshi Kiya highlights his opinions in how to cultivate junior researchers and shares his goal in personal research. Valuable suggestions are also given for motivation, capability and related social activities for young researchers who want to achieve successful research work. [[Youtube link](#)] [[Youku link](#)]
13. **Professor Kiyoharu Aizawa:** In this interview, Prof. Aizawa introduced his lab and lifelog and foodlog technology in his recent research. In addition, Prof. Aizawa provided some suggestions for junior master or PhD students like how to select research topics. At last, he expressed his preference on individual work and team work for one research topic. [[Youtube link](#)] [[Youku link](#)]
14. **Dr. Anthony Vetro:** In this interview, Dr. Anthony Vetro introduced the research topics he was working on, talked about 3-Dimensional video processing. For younger researchers and students, he summarized the features of good quality papers in signal and video processing field, and provided lots of suggestions to younger researchers and students. At last, he shared his working experience at Mitsubishi. [[Youtube link](#)] [[Youku link](#)]
15. **Professor Biing-Hwang (Fred) Juang:** In this interview, Professor Biing-Hwang (Fred) Juang highlights how speech processing and its applications have evolved over time. Then, he offered his perspectives on trends in speech recognition and intelligence transmission over the next ten years. For the benefit of young scientists and students, he shared his experiences on how to combine successful research with free time and talked about the most important characteristic to a young scientist. [[Youtube link](#)] [[Youku link](#)]
16. **Professor Yo-Sung Ho:** In this interview Professor Yo-Sung Ho firstly introduced the challenging topics he's currently working on. Then, he envisioned the future trends in the field of signal and information processing. He also shared his opinions on APSIPA social net. Finally, he talked about his own experience on how to do good research and give valuable suggestions for younger generation researchers. [[Youtube link](#)] [[Youku link](#)]
17. **Professor Kenji Shimada:** In this interview, Professor Shimada talked about 3D printing and robot assisted surgery in near future. To young scientists and students, he gave some suggestions on how to do research and shared his experiences on how to efficiently arrange time when doing multidisciplinary studies. [[Youtube link](#)] [[Youku link](#)]
18. **Professor Waleed Abdulla:** In this interview, He introduced his research lab and the biometric authentication using pruned fingerprints in his recent research. In addition, he provided some suggestions for junior PhD students on how to choose a career path, how to manage the balance between life and research, and, finally, how to write high quality papers. [[Youtube link](#)] [[Youku link](#)]
19. **Panel Sessions- Confronting Issues while Practicing Research:** Moderator: Professor C.-C. Jay Kuo, University of Southern California, USA, Panelists: Oscar Au, Hong Kong University of Science and Technology, Hong Kong and Waleed Abdulla, University of Auckland, New Zealand and Thomas Zheng, Tsinghua University, China and Hsueh-Ming Hang, National Chiao Tung university, Taiwan. [[Youtube link](#)] [[Youku link](#)]

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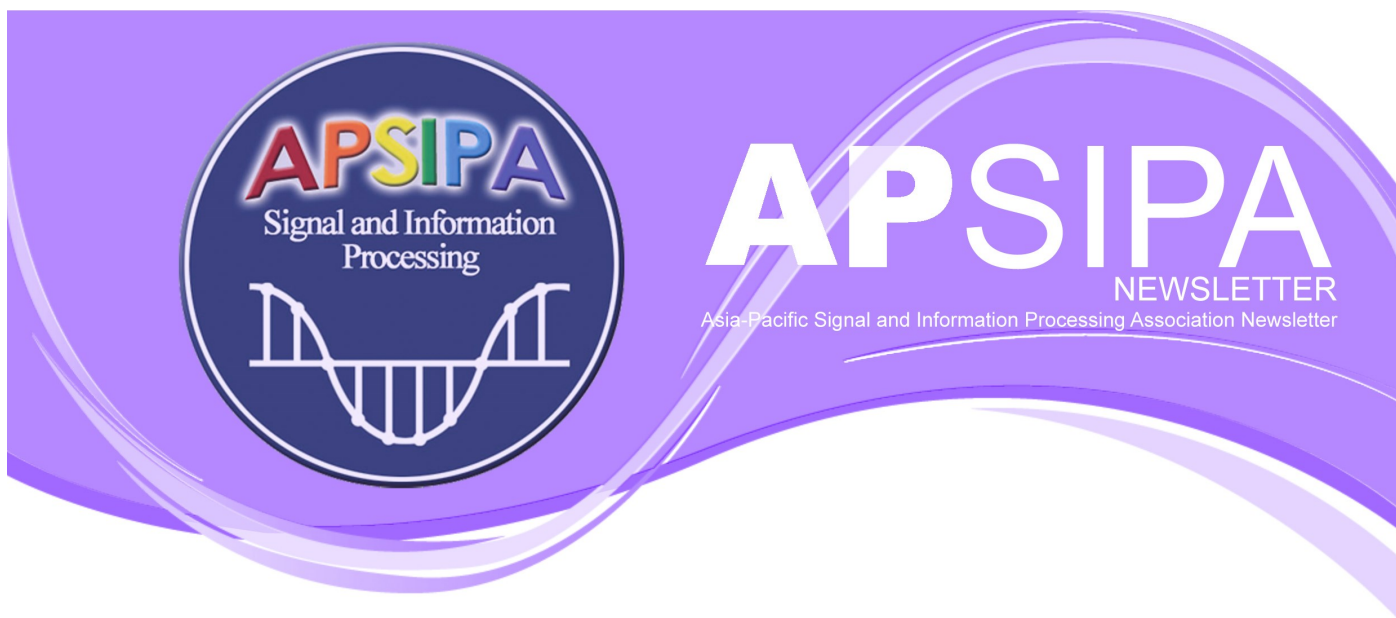
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