



APSIPA

ASIA PACIFIC SIGNAL AND INFORMATION PROCESSING ASSOCIATION

NEWSLETTER

ISSUE 48, JUNE 2026

<http://www.apsipa.org/>

Greeting from the Editorial Office

Welcome to the June 2026 issue of the APSIPA Newsletter!

As I write this, the FIFA World Cup is underway across the United States, Canada, and Mexico. The world coming together to compete at the highest level, with energy and genuine respect, has always felt very much like the spirit of APSIPA.

In that spirit, I am delighted to share that APSIPA ASC 2026 will be held in Bangkok, Thailand, from November 9 to 12. Bangkok offers excellent connectivity and warm hospitality, and we cannot wait to welcome you there. The paper submission deadline is June 30, 2026, so please bring us your latest work.

We also have an update on APSIPA Transactions on Signal and Information Processing. Following its move to Emerald Publishing, which has since become part of Wiley, the journal is running smoothly with a leadership of the editorial board.

A venue may move and a publisher may change hands, but our community and our standards stay constant. You can also follow [APSIPA on LinkedIn](#) to stay connected with us between issues. Thanks for reading, and I hope you enjoy this issue!

Yuichi Tanaka

EiC of the
APSIPA
Newsletter



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APSIPA Annual Summit and Conference 2026

November 9-12, 2026, Bangkok, Thailand



Relocation of APSIPA ASC 2026

APSIPA Board of Governors

APSIPA is pleased to confirm that APSIPA ASC 2026 will be held at the Courtyard by Marriott Bangkok Suvarnabhumi Airport, Bangkok, Thailand. Following a careful review of the conference's operational and logistical requirements, the venue has been selected to provide a convenient, well-connected, and conference-ready environment for the APSIPA community.

The decision to relocate from Hanoi to Bangkok was made to ensure smoother preparation, stronger logistical coordination, and a high-quality experience for all participants. Bangkok offers excellent regional and international connectivity, making it a highly accessible destination for delegates from across the Asia-Pacific region and beyond. The confirmed venue, located close to Suvarnabhumi Airport, provides practical advantages including convenient airport access, integrated accommodation, meeting facilities, and modern hospitality services within a single conference-friendly setting. A complimentary hotel shuttle bus runs regularly to pick up participants from the airport, while the Airport Rail Link connects Suvarnabhumi directly to Bangkok city, ensuring seamless transport options for delegates. In addition, a wide range of nearby hotels ensures flexible accommodation choices to suit different preferences and budgets.

Beyond its logistical advantages, Thailand is also widely known for its warm hospitality, welcoming culture, and vibrant international atmosphere. Delegates will have the opportunity to observe local life and villages on the outskirts of Bangkok, as well as conveniently visit historic landmarks, bustling markets, temples, and palaces. This offers



a unique, rich cultural experience alongside professional engagement. We believe that the gracious hospitality of the Thai people, together with Bangkok's dynamic setting, will provide an inviting and memorable experience for our delegates, speakers, partners, and guests.

This relocation reflects APSIPA's commitment to delivering a professionally organized, accessible, and successful ASC 2026. With the venue now confirmed, the organizing team will proceed with full preparations to support authors, speakers, exhibitors, sponsors, and members of the APSIPA community.

We warmly invite all colleagues, researchers, and students to submit papers to APSIPA ASC 2026. The conference provides an excellent platform to exchange ideas, present innovative work, and engage with the APSIPA community. The deadline for paper submission is June 30, 2026. For submission guidelines and details, please visit <https://www.apsipa2026.org/>.

We sincerely appreciate the understanding and continued support of all members, and we look forward to welcoming everyone to Bangkok for a vibrant and productive APSIPA ASC 2026.



2026 APSIPA K.J. Ray Liu Mid-Career Excellence Award

APSIPA K.J. Ray Liu Mid-Career Excellence Award Committee

The APSIPA K.J. Ray Liu Mid-Career Excellence Award recognizes outstanding researchers who have demonstrated excellence in their fields, sustained involvement in, and service contributions to APSIPA. Each year, up to three awardees are selected. We are proud to introduce the **2026 award recipients**:

Dr. Rohan Kumar Das, R&D Manager, Fortemedia, Singapore

Rohan Kumar Das received his Ph.D. from the Indian Institute of Technology (IIT) Guwahati. He worked as a Data Scientist at Kovid Research Labs (now Kaliber Labs) in 2017 and later joined the Human Language Technology Laboratory at the National University of Singapore as a Research Fellow until 2021. He is currently the R&D Manager at Fortemedia, Singapore. He serves as an Associate Editor of



IEEE Signal Processing Letters and has organized several international challenges/special sessions at major conferences.

He has served in the technical and organizing committees of conferences such as ASRU, Interspeech, APSIPA and ISCSLP. He is a Senior Member of IEEE, Member of ISCA and APSIPA. He has been recently awarded with inaugural edition of ISCA Mid-Career Award 2026.

Dr. Das has been an active contributor to the APSIPA community for nearly a decade. He has regularly published and presented his work at the APSIPA ASC, including an overview article in APSIPA Transactions that received significant recognition from the research community. He has also played key organizational roles in APSIPAASC, serving as Special Session Chair and Grand Challenge Chair. In addition, he is an active member of the APSIPA Singapore Chapter, contributing to various initiatives such as the Student Best Paper Award selection process and the organization of seasonal schools and chapter events. In recognition of his technical contributions and service to the community, he was appointed as APSIPA Distinguished Lecturer for the 2025–2026 term, under which he has delivered several invited lectures.



🏆 Dr. Keisuke Imoto, Associate Professor, Kyoto University

Dr. Imoto received the B.S. and M.S. degrees in Engineering from Kyoto University, Japan, in 2008 and 2010, respectively, and the Ph.D. degree in Informatics from SOKENDAI (The Graduate University for Advanced Studies), Japan, in 2017. He is currently an Associate Professor at Kyoto University, Japan. His research interests include acoustic signal processing, sound event and scene analysis, anomalous sound detection, general audio synthesis, and microphone array signal processing.



He has actively contributed to APSIPA, serving as Secretary of the APSIPA AAM Technical Committee since 2025 and organizing special sessions on general audio understanding at APSIPA ASC since 2021. He received the Telecom System Technology Award from the Telecommunications Advancement Foundation in 2018 and the 10th APSIPA Sadaoki Furui Prize Paper Award (Research Paper Award) in 2025.

🏆 Dr. Sayaka Shiota, Associate Professor, Tokyo Metropolitan University

Dr. Shiota received her B.E., M.E., and Ph.D. degrees in intelligence and computer science, Engineering, and engineering simulation from Nagoya Institute of Technology in 2007, 2009, and 2012, respectively. From February 2013 to March 2014, she worked as a project assistant professor at the Institute of statistical mathematics. In 2014, she joined Tokyo Metropolitan University as an assistant professor and became an associate professor in 2023. Her research interests include statistical speech recognition and speaker verification. She is a member of ASJ, IPSJ, IEICE, APSIPA, ISCA, and IEEE.



Dr. Shiota specializes in speaker recognition, spoofing attack detection, and privacy-preserving speech processing. She has published influential work in APSIPA Transactions and ASC, including research on privacy-preserving speech recognition and voice privacy preservation. Beyond her research, she has played key leadership roles in APSIPA, serving as Secretary of the APSIPA Speech and Language Processing Technical Committee and as a founding member of the APSIPA Tokyo Chapter.



✨ The awards will be formally presented at **APSIPA ASC 2026**, where the recipients will also deliver invited presentations.

We extend our heartfelt congratulations to Dr. Das, Dr. Imoto, and Dr. Shiota for their remarkable achievements and contributions.

Looking ahead, APSIPA encourages colleagues to consider applying for the 2027 K.J. Ray Liu Mid-Career Excellence Award. For more information, please visit https://www.apsipa.org/Awards.aspx#AWARD_MID_CAREER.



Message from the APSIPA TSIP Editor-in-Chief

Seishi Takamura (EiC, APSIPA Transactions on Signal and Information Processing)

Since my previous newsletter message in February, APSIPA Transactions on Signal and Information Processing (TSIP) has continued its efforts to strengthen its editorial operations and broaden its impact within the signal and information processing community.

One encouraging development is that the transition from Now Publishers to Emerald Publishing has gradually stabilized. While several migration-related issues required attention during the early stages, the journal's editorial workflow and publication process are now operating much more smoothly. I would like to thank our authors, reviewers, Associate Editors, and Editorial Board members for their patience and support throughout this period of change.

We are also pleased to announce a new Special Issue, *Recent Advances in Signal and Information Processing for Industrial Applications*, organized in collaboration with the APSIPA Industry Promotion Committee (IPC). This Special Issue aims to provide a forum for practical innovations, industrial deployments, proof-of-concept studies, and academia-industry collaborations. We particularly encourage submissions that demonstrate how signal and information processing technologies create impact in real-world applications. <https://www.emeraldgrouppublishing.com/calls-for-papers/recent-advances-signal-and-information-processing-industrial-applications>

Another noteworthy development within APSIPA is the establishment of the APSIPA Sadaoki Furui Prize Award Committee. Named in honor of APSIPA's founding president, Prof. Sadaoki Furui, this initiative represents an important step toward recognizing outstanding contributions and leadership within our community. We look forward to seeing this prestigious award further strengthen APSIPA's tradition of excellence.

The publishing landscape continues to evolve rapidly. Shortly after the transition from Now Publishers to Emerald Publishing, Emerald itself became part of Wiley. According to the information provided by the publisher, the journal's editorial structure, peer-review process, and editorial independence will remain unchanged. Nevertheless, given the series of transitions we have experienced over the past year, we will continue to monitor developments carefully and work closely with the publisher to ensure a stable and high-quality publication environment for our authors and readers.

Our editorial team remains committed to providing timely, fair, and rigorous peer review. We continue to work toward shorter turnaround times while maintaining the high standards expected by APSIPA members and the broader research community.



Thank you for your continued support of APSIPA TSIP. We look forward to receiving your future submissions and to working together to further enhance the journal's quality, visibility, and impact. We are also actively pursuing opportunities to expand the journal's visibility and submission base through collaborations with related conferences and research communities.



APSIPA Annual Summit and Conference 2029

Call for Proposals

APSIPA Board of Governors

The Asia-Pacific Signal and Information Processing Association (APSIPA) is pleased to invite proposals to host the 2029 APSIPA Annual Summit and Conference (APSIPA ASC).

APSIPA ASC serves as a premier international forum for presenting advances and research outcomes in theoretical, experimental, and applied signal and information processing. The conference attracts approximately 500 participants annually and provides a key platform for advancing research frontiers across established application domains and emerging technologies. Many important contributions are first introduced through APSIPA ASC sessions and related events.

APSIPA members are now invited to submit a proposal to host APSIPA ASC 2029. Interested parties are encouraged to review the guidelines for detailed submission requirements (<https://www.apsipa.org/Conference.aspx>).

Proposal Submission Materials:

- APSIPA Conference Proposal Pre-Screening Form
- APSIPA Conference Proposal Pre-Screening Budget Summary
- Organizing Committee List

Completed materials should be submitted to the Vice President for Conferences (Prof. Bonnie Law; email: ennflaw@polyu.edu.hk) by 27 August 2026:

The APSIPA-ASC Conferences Committee will review the proposal pre-screening forms to shortlist proposing teams. Finalists will be invited to submit full proposals and, subject to approval, present them at the APSIPA-ASC Conference Committee meeting, to be held during APSIPA ASC 2026 from 9-12 November 2026.



Call For Nominations for APSIPA Sadaoki Furui Prize Paper Award

Seishi Takamura (EiC, APSIPA TSIP) and Sanghoon Lee (VP-Publications)

The APSIPA Sadaoki Furui Prize Paper Award is presented annually at APSIPAASC and is selected from papers published during the preceding five years. Nominations with supporting comments should be sent to the Editor-in-Chief (takamura@ieee.org) or the VP-Publications (slee@yonsei.ac.kr), who serve as co-chairs of the Award Committee, by August 1.

Starting from 2025, two APSIPA Sadaoki Furui Prize Paper Awards will be presented separately in the categories of Overview Paper Award and Research Paper Award. In 2026, the 11th APSIPA Sadaoki Furui Prize Paper Award will be selected, and the award will be presented at APSIPAASC 2026.

We sincerely encourage active nominations and participation from the APSIPA community.

News from the Technical Committees

Mingyi He (VP-Technical Activities)

2025 TC Meetings and TC Chairs Meeting Held in Singapore

The 2025 APSIPA Technical Committee Meetings were held in Singapore on October 23. The nine TC chairs shared their key work, experiences, and plans for 2026. Elections were conducted for two technical committees: the Signal Processing Systems (SPS) and the Wireless Communications and Networking (WCN).

The 2025 APSIPA Technical Committee Chairs Meeting was held on October 24. Professor Mingyi He, APSIPA Vice President for Technical Activities, reviewed the key achievements in 2025 and outlined the major tasks for 2026. Several technical committee chairs also shared their experiences during the meeting.

For the first time, APSIPA's annual Outstanding Technical Committee Award was selected by a review panel composed of APSIPA Board of Governors (BoG) leaders and members, based on the work reports submitted by each committee.

At the closing session on October 24, VP Mingyi He announced that the recipient of the 2025 Outstanding Technical Committee Award is the Speech and Language Processing Technical Committee.



President Woon-seng Gan (R4) and VP Mingyi He (R2) presented the 2025 APSIPA Outstanding Technical Committee certificate to the "Speech and Language Processing Technical Committee".

Information for Technical Committee Chairs (2026)

Technical Committee	Current Term	Chair	Email	Affiliation (Country or Region)	
Audio, Acoustics, and Music	AAM	2025-2026	Nobutaka Ono	onono@tmu.ac.jp	Tokyo Metropolitan University, Japan
Biomedical Signal Processing & Systems	BioSiPS	2025.8-2027	Baiyin Lei	leiby@szu.edu.cn	Health Sci Center, ShenZhen Univ, Shen Zhen
Image, Video, and Multimedia	IVM	2025-2026	Li-Wei Kang	lw kang@ntnu.edu.tw	National Taiwan Normal Univ, Taiwan
Machine Learning & Data Analytics	MLDA	2025-2026	Jen-Tzung Chien	jtchien@nycu.edu.tw	National Yang Ming Chiao Tung Univ, Taiwan
Multimedia Security and Forensics	MSF	2025-2026	Jiantao Zhou	jtzhou@umac.mo	Univ of Macau, Macau
Signal and Information Processing Theory and Methods	SIPTM	2025-2026	Yuchao Dai	daiyuchao@nwpu.edu.cn	Northwestern Polytechnical Univ, Xi'an
Speech and Language Processing	SLP	2025-2026	Tomoki Toda	tomoki@icts.nagoya-u.ac.jp	Nagoya University, Japan
Signal Processing Systems	SPS	2026-2027	Trio Adiono	tadiono@itb.ac.id	Institut Teknologi Bandung, Indonesia
Wireless Communications and Networking	WCN	2026-2027	Kouji Hirata	hirata@kansai-u.ac.jp	Kansai University, Japan

Mingyi HE, APSIPA VP (Technical Activities)

Email: myhe@nwpu.edu.cn



APSIPA Cosponsored ICVISP 2025 Held in Xi'an

The 9th International Conference on Vision, Image and Signal Processing (ICVISP 2025) was held from November 28 to 30, 2025 in Xi'an. The conference was organized by Northwestern Polytechnical University(NPU) and Xi'an University of Posts and Telecom-munications (XUPT), and technically co-sponsored by APSIPA and IEEE Xi'an Section.

The main theme of the conference was "Multimodal AI: Exploring the New Frontiers of Vision, Image, and Signal Processing".

The conference program included 3 keynote talks, 11 invited talks, 6 parallel panel sessions, and a number of poster presentations.



(Left) Prof. Mingyi He gave a welcome speech. (Right) Keynote speech by Prof Tatsuya Kawahara.

Prof. Tatsuya Kawahara (Former President, APSIPA; Kyoto University), Prof. Kai-Kuang Ma (Academician, Singapore Academy of Engineering; Chair Professor, Nanjing University of Aeronautics and Astronautics), and Prof. Toshihisa Tanaka (Vice President, APSIPA; Tokyo University of Agriculture and Technology) delivered keynote speeches entitled "Making a Robot to Communicate with Social Signals", "AI-Powered Imaging: Transforming the Future of Visual Experience", and "Decoding Internal States via Biosignals for Speech and Social Interaction", respectively.



(Left) Keynote speech by Prof. Kai-Kuang Ma. (Right) Keynote speech by Prof. Toshihisa Tanaka.



VP, Prof He Talks on Industrial AI at a XinhuaNet Forum

The 2025 China Private Economy and Listed Companies Development Conference -"Innovation-Driven High-Quality Development Forum of the Private Economy", sponsored by Xinhuanet and Xinhua News Agency—Fujian, was held in Jinjiang, Fujian Province on December 24, 2025. APSIPA Vice President Prof. Mingyi He of Northwestern Polytechnical University was invited to present a talk titled "Industrial Artificial Intelligence Technology and Industrial Development Trends".

Professor He noted that while current digital AI technologies have played a very important role in areas such as security monitoring and fault detection, they still face several challenges: data correlation fails to fully leverage industrial physical characteristics, data samples are limited, industrial processes are complex and dynamic, and resources including data and computing power are constrained.

To address these challenges, he proposed several suggestions: deeply integrate industrial physical characteristics into LLM-based AI systems. Notably, finite-precision technology for engineering implementation has achieved breakthrough progress, as demonstrated by the low-bit AI chip announced in 2025.

In addition, Professor He presented three typical industrial AI application cases: spatial-temporal-spectral joint observation and intelligent processing, UAV-based intelligent Earth observation, and digital and intelligent transformation in the thermal power industry. To date, the Xinhuanet news report on Prof. Mingyi He’s talk has received over 1.2 million views.



VP, Prof He Talks on Industrial AI at a XinhuaNet Forum.

(Source from: <https://www.news.cn/finance/20251229/c5ca2a6b81c248a18007868f39a4fe4b/c.html>)



Taipei Local Chapter

Wen-Hsiao Peng (Taipei Local Chapter Chair)

Date: June 8 (Monday), 2026

Time: 10:00-15:00 Hsinchu (UTC+8)

Location: Room EC340, Engineering Building 3, National Yang Ming Chiao Tung University (NYCU), Hsinchu

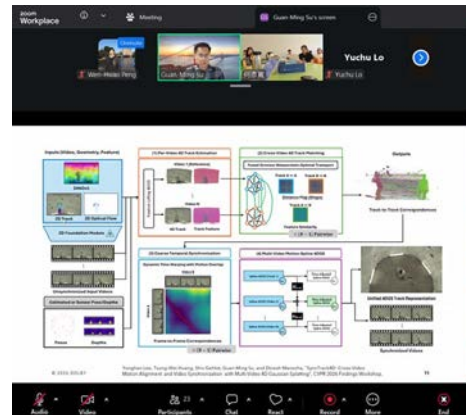
Organizer: Prof. Wen-Hsiao Peng (NYCU; Chair of APSIPA Taipei Local Chapter)

Estimated number of attendees: 25 (on-site) + 25 (online, from Taiwan, Brazil, Japan, US, Korea and Vietnam) = 50

On June 8, 2026, the APSIPA Taipei Local Chapter successfully hosted a workshop on “Emerging and Immersive Visual Media: Hardware, Compression, and 3D/4D Representation” at National Yang Ming Chiao Tung University (NYCU). The event attracted approximately 50 participants, including 25 on-site attendees and 25 online participants from Taiwan, Brazil, Japan, the United States, Korea, and Vietnam.

The workshop brought together distinguished researchers from academia and industry to discuss recent advances in immersive visual media, neural compression, hardware acceleration, and efficient 3D/4D scene representation. The program featured four invited talks covering both theoretical foundations and practical deployment challenges.

The first talk, “Immersive Volumetric Video Experience with Spatial-Temporal Multi-Modal Gaussian Splatting,” was delivered by Dr. Guan-Ming Su, Vice Chair for Conference of the IEEE Technical Committee on Multimedia Computing (TCMC) and Director of Research at Dolby Laboratories, USA. Dr. Su is also an APSIPA Industrial Distinguished Leader. He provided a comprehensive overview of Gaussian Splatting technologies, covering content capture, creation, delivery, and consumption, and discussed emerging trends in multi-modal immersive media and international standardization activities.



Talk by Dr. Guan-Ming Su.



Talk by Prof. Luciano Agostini.

The second talk, “Results and Challenges of the Hardware Design for Video Coding,” was presented by Prof. Luciano Volcan Agostini, a member of the IEEE CAS Multimedia Systems Applications Technical Committee (MSATC) and Visual Signal Processing and Communications Technical Committee (VSPC), and Full Professor at the Federal University of Pelotas (UFPe), Brazil. His presentation examined the computational challenges of modern video coding standards such as VVC and AV1 and highlighted efficient hardware architectures for real-time video processing.



Talk by Prof. Heming Sun.

The third talk, “Post-Training Quantization for Overfitted Image Compression,” was given by Dr. Heming Sun, APSIPA Distinguished Lecturer and Associate Professor at the Institute of Science Tokyo, Japan. He introduced practical post-training quantization techniques for neural image codecs, demonstrating how integer-only implementations can significantly reduce decoding complexity while preserving compression efficiency.



Talk by Prof. Rachel Chiang.

The final talk, “From Point Clouds to Gaussian Splatting: Neural Coding for Efficient 3D/4D Multimedia Representations,” was delivered by Prof. Jui-Chiu Chiang, IEEE CAS Visual Signal Processing and Communications Technical Committee (VSPC) member, Associate Editor of IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), and Professor at National Chung Cheng University, Taiwan. She presented



Group photo.

recent advances in end-to-end neural coding frameworks for point clouds and dynamic Gaussian Splatting, achieving highly competitive rate-distortion performance for immersive spatial media applications.

Overall, the workshop showcased state-of-the-art developments in spatial-temporal multi-modal Gaussian splatting, hardware-efficient video coding, neural image compression, and immersive 3D/4D multimedia representations.



APSIPA

ASIA PACIFIC SIGNAL AND INFORMATION PROCESSING ASSOCIATION

Taipei Local Chapter

Workshop on Emerging and Immersive Visual Media: Hardware, Compression, and 3D/4D Representation

Date: June 8 (Monday), 2026

Time: 10:00 – 15:00 Hsinchu (UTC+8)

Location: Room EC340, Engineering Building 3 (工程三館), National Yang Ming Chiao Tung University (NYCU), Hsinchu

Organizer: Prof. [Wen-Hsiao Peng](#) (NYCU; Chair of APSIPA Taipei Local Chapter)

Zoom link:

<https://us06web.zoom.us/j/87485546676?pwd=I9DfPP6SZoGr27mLtfj5cNpV3DoE7g.1>

Technical Program:

Time (UTC+8)	Topic	Speaker
10:00 – 10:05	Opening Remarks	Prof. Wen-Hsiao Peng Chair of APSIPA Taipei Chapter
10:05 – 10:55	Immersive Volumetric Video Experience with Spatial-Temporal Multi-Modal Gaussian Splatting	Dr. Guan-Ming Su (APSIPA Industrial DL) Dolby Laboratories
10:55 – 11:40	Results and Challenges of the Hardware Design for Video Coding	Prof. Luciano Agostini Universidade Federal de Pelotas
11:40 – 13:00	Lunch Break	
13:00 – 13:50	Post-Training Quantization for Overfitted Image Compression	Prof. Heming Sun (APSIPA DL) Institute of Science Tokyo
13:50 – 14:40	From Point Clouds to Gaussian Splatting: Neural Coding for Efficient 3D/4D Multimedia Representations	Prof. Jui-Chiu Chiang (APSIPA DL) National Chung Cheng Univ.

Sponsors: [APSIPA Taipei Local Chapter](#) and [H & J Global Chair Program \(華仁講座\)](#)

Contact: Prof. Wen-Hsiao Peng (wpeng@cs.nycu.edu.tw)

DL talk poster.



Talk #1: *Immersive Volumetric Video Experience with Spatial-Temporal Multi-Modal Gaussian Splatting* (Dr. Guan-Ming Su, Dolby Labs)

Abstract: In the past few years, Gaussian Splatting has become the most promising volumetric video representation. For real-world scenarios, a great amount of research efforts has been conducted in many perspectives for better spatial-temporal multi-modal scene reconstruction and more effective deployment. In this talk, we will first introduce the fundamental representation of Gaussian Splatting, including attributes, construction, rendering, and optimization. Then, we will overview the recent development of Gaussian Splatting along the end-to-end ecosystem from content capture, content creation, content delivery, to content consumption. More specifically, on the content capture stage, we will address issues and solutions for multi-view cameras set up in both spatial and temporal domains to assist good quality model building. On the content creation stage, to enrich the multi-modal experience, learned audio, semantic, physics attributes from foundation models are embedded into the Gaussian Splatting primitives to enable the joint audio-visual-semantic-physics representation. Application of Gaussian Splatting on 2D video representation will be discussed. On the content delivery stage, instead of explicitly coding dozens of attributes per Gaussian, implicit methods such as using coarse geometry representations, 2D plane projection, and MLP to leverage the conventional 2D video codec to reach high photorealistic quality and streamable bit rate will be discussed. On the content consumption stage, relightable physics based rendered (PBR) Gaussian Splatting, multi-part Gaussian Splatting with joint, and LLM-assisted system can enable interactive 3D scene navigation and efficient physics-aware multi-modal rendering to improve user engagement. At the end of this talk, we will present the latest international standardization efforts and highlight future research trends.

Talk #2: *Results and Challenges of the Hardware Design for Video Coding* (Prof. Luciano Agostini, UFPel)

Abstract: This talk will present the main challenges in hardware design for video codecs and briefly discuss solutions developed by the speaker's research group to address them. The main focus will be on hardware architectures for VVC and AV1 encoders, but solutions targeting previous codecs, such as HEVC, AVC, and JPEG, will also be briefly covered. The key challenge in this area is the significant amount of data required to represent digital videos, combined with the high computational cost of modern codecs. Both aspects have become increasingly critical over the years, due to the emergence of new coding standards with progressively higher complexity and the continuous increase in requirements for spatial and temporal video resolutions. In this context, practical solutions for digital video processing typically rely on some type of hardware acceleration, from chipsets used in smartphones, through general-purpose processors and GPUs. The talk aims to present this scenario, discussing the challenges derived from this key challenge and some design alternatives for enabling the efficient hardware implementation of video codecs.



Talk #3: *Post-Training Quantization for Overfitted Image Compression* (Prof. Heming Sun, Institute of Science Tokyo)

Abstract: Overfitted neural image codecs offer a promising path toward ultra-low-complexity decoding, making them well suited for resource-constrained hardware. However, fully realizing this potential requires an integer-only pipeline, which remains challenging due to their extreme sensitivity to post-training quantization (PTQ). We present an effective methodology for 8-bit weight, 16-bit activation quantization, developed through a three-stage investigation. (1) We first establish that a fine-grained, per-channel quantization scheme is the essential foundation for preserving model fidelity. (2) We then use Hessian analysis to identify strong weight dependencies as the primary bottleneck and apply a dependency-aware compensation algorithm to mitigate the resulting errors. (3) To further refine the compensation process, we integrate a principled, decreasing-importance order into the quantization sequence. Our final approach reduces the rate-distortion overhead to just +2.95% BD-Rate on the Kodak dataset and +2.78% BD-Rate on the CLIC dataset, establishing a practical methodology for this sensitive codec class.

Talk #4: *From Point Clouds to Gaussian Splatting: Neural Coding for Efficient 3D/4D Multimedia Representations* (Prof. Rachel Chiang, National Chung Cheng University)

Abstract: Next-generation interactive applications require efficient representation and compression frameworks to transmit immersive 3D/4D content. As 3D multimedia evolves from point clouds to view-synthesis paradigms such as 3D Gaussian Splatting (3DGS), a fundamental challenge remains consistent across these diverse formats: how to efficiently encode complex spatial and temporal data while faithfully reconstructing the plenoptic function of dynamic 3D scenes.

This talk introduces two end-to-end neural coding frameworks for efficient 3D and 4D multimedia representations. First, we present a unified point cloud compression framework with a single-encoder, dual-decoder architecture that jointly compresses geometry and attributes through a shared latent representation. The framework eliminates legacy recoloring bottlenecks and manual bit-allocation procedures, enabling efficient end-to-end optimization. Second, we present a rate-distortion-optimized framework for dynamic 4D Gaussian Splatting (4DGS). Built on a sparse anchor-based representation, the framework introduces learnable temporal-activation parameters to explicitly model the appearance and disappearance of Gaussian primitives over time, effectively handling occlusions without unnatural deformation artifacts. The framework further incorporates embedding-based deformation and lightweight INR-based hyperpriors for efficient compression.

By introducing advanced architectural priors and fully end-to-end data-driven optimization, these two works establish highly competitive processing efficiency and state-of-the-art rate-distortion performance for immersive spatial media representations.



Summary of Links

- APSIPA ASC 2026: <https://apsipa2026.org/>
- APSIPA ASC 2025: <https://www.apsipa2025.org/>
- APSIPA Transaction on Signal and Information Processing:
<https://www.emerald.com/atsip>
 - Paper submission: <https://mc.manuscriptcentral.com/apsipa>
- APSIPA Industrial Activities: <http://www.apsipa.org/industrial.htm>
- APSIPA Friend Labs: <http://www.apsipa.org/friendlab/FriendLabs.htm>
- APSIPA Membership Registration/Renewal:
<http://www.apsipa.org/reg.asp>
- APSIPA Local Chapters: <http://www.apsipa.org/chapter/index.html>
- APSIPA Photo Gallery: <http://www.apsipa.org/photo/photo.htm>



APSIPA Who's Who

President: **Woon-Seng Gan**, Nanyang Technological University

President-Elect: **Kosin Chamnongthai**, King Mongkut's University of Technology Thonburi

Past Presidents: **Sadaoki Furui** (2009-2012), **C.C. Jay Kuo** (2013-2014), **Haizhou Li** (2015-2016), **Wan-Chi Siu** (2017-2018) **Hitoshi Kiya** (2019-2020), **Anthony Kuh** (2021-2022)

Immediate Past President: **Tatsuya Kawahara**, Kyoto University

VP - Conferences: **Bonnie N. F. Law**, The Hong Kong Polytechnic University

VP - Industrial Relations and Development: **Chris Gwo Giun Lee**, National Cheng Kung University

Deputy VP - Industrial Relations and Development: **Ning Xu**, Dobby Laboratories

VP - Institutional Relations and Education Program: **Isao Echizen**, National Institute of Informatics

VP - Member Relations and Development: **Wen-Hsiao Peng**, National Yang Ming Chiao Tung University

VP - Publications: **Sanghoon Lee**, Yonsei University

VP - Technical Activities: **Mingyi He**, Northwestern Polytechnical University

Members-at-Large:

Nancy F. Chen, A*STAR

Jing-Ming Guo, National Taiwan University of Science and Technology

Yoshinobu Kajikawa, Kansai University

Jong-Ok Kim, Korea University

Kenneth K. M. Lam, The Hong Kong Polytechnic University

Toshihisa Tanaka, Tokyo University of Agriculture and Technology

Yuichi Tanaka, The University of Osaka

Hsin-Min Wang, Academia Sinica

Kok Sheik Wong, Monash University Malaysia

Hong Vicky Zhao, Tsinghua University

Thomas Fang Zheng, Tsinghua University

Ce Zhu, University of Electronic Science and Technology of China

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Address:

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