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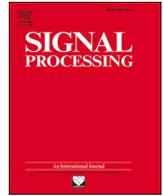
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# Signal Processing

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## Editorial for the 45th anniversary special issue of signal processing

It is with great pleasure that we introduce this special issue of Signal Processing, published to mark the 45th anniversary of the journal. Since its inception in 1979, Signal Processing has played a foundational role in shaping the evolution of the field. As the flagship journal of the European Association for Signal Processing (EURASIP), it has served not only as a premier venue for scientific dissemination but also as a pillar of the signal processing research community.

This long-standing relationship between Signal Processing and EURASIP has been central to the journal's identity. Over the decades, EURASIP has worked tirelessly to promote excellence in signal processing through conferences, summer schools, and publications. Signal Processing, published by Elsevier on behalf of EURASIP, has embodied these values by maintaining high editorial standards, a rigorous peer-review process, and an inclusive approach to emerging trends and interdisciplinary research.

The articles gathered in this special issue originate from selected contributions to the 2024 edition of EUSIPCO, EURASIP's flagship conference. Each paper was chosen for its scientific quality, originality, and ability to represent the vitality of contemporary signal processing research. Topics include but are not limited to: distributed and online learning, graph and manifold signal processing, statistical inference, information-theoretic methods, and innovative applications in audio, image, communication, and sensing systems.

Together, these contributions form a vibrant snapshot of the field today, showcasing both solid theoretical foundations and novel

approaches to real-world problems. This issue also reflects the continuing commitment of Signal Processing to offer a space for timely, high-quality research that anticipates the future of the discipline.

We warmly thank all authors for their outstanding contributions, the reviewers for their careful assessments, and the EUSIPCO 2024 Technical Program Committee for their essential role in the selection process. We are particularly grateful to Elsevier and the journal's editorial team for supporting this anniversary initiative, and to EURASIP for its decades-long commitment to fostering a strong, dynamic signal processing community.

As Signal Processing enters its fifth decade, we reaffirm its mission to be a platform for excellence and innovation. We look forward to continuing this journey with our authors, readers, and the global EURASIP community.

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