# ISSPA'99



Proceedings of the Fifth International Symposium on Signal Processing and its Applications



Volume 1



Brisbane Convention & Exhibition Centre, Queensland, Australia 22 - 25 August 1999 ISSPA '99





## Proceedings of the Fifth International Symposium on Signal Processing and its Applications

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QLD 4101 Australia

Phone: +61 7 3844 1138

Fax: +61 7 3844 0909

email: isspa@icms.com.au

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### Welcome to ISSPA 99

It is with great pleasure that we extend our invitation to all of you attending the 5<sup>th</sup> International Symposium on Signal Processing and its Applications (ISSPA 99). The Conference, held at the Brisbane Convention and Exhibition Centre, is the premier conference in signal processing research in the Asia Pacific Region.

ISSPA 99 offers a rich technical program consisting of plenary sessions, tutorials, and oral and poster sessions. More than 260 papers will be presented spanning different areas of signal processing, speech and image processing. Keynote speakers from around the world, all experts in their research and distinguished industry leaders, will share their knowledge, experience, and their views on the future of Signal Processing technology in three plenary sessions.

The Conference is held at the Brisbane Convention Centre, a magnificent venue adjacent to the Central Business District in easy reach of hotels and at only few hundred meters from the South Bank Parklands, previously the site of EXPO'88. For the convenience of the delegates, we have arranged to include buffet lunches and morning/afternoon teas in the registration packages.

We are indebted to the Plenary Speakers, Tutorials Presenters, and all the contributing authors for their efforts and contributions to make the Conference a success. Special thanks should go to the members of the Organising Committee for all their efforts and the members of the Technical Program Committee for devoting time and effort to careful reviewing of the submitted papers.

Finally, we would like to encourage you to see this symposium as an opportunity to meet with other scientists and engineers from the region and to benefit from each other's experiences and knowledge in this sunny part of the world. We will make every effort in ensuring that your attendance will be a pleasant and memorable one.

Dr. Mohamed Deriche Conference Chair Prof. Boualem Boashash Steering Committee Chair Dr. Wageeh Boles Publications Chair

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### FROM THE TECHNICAL PROGRAM CHAIRS

Welcome to ISSPA'99, the 5<sup>th</sup> International Symposium on Signal Processing and its Applications. This Conference comes at a time of tremendous public awareness and concern about how technology is impacting our present and future. Our future social and economic well being will greatly depend on the successful application of technology to the development of new products, improvement of existing products, and provision of affordable high quality services. This international event has been established to keep up to date with the ultra-fast growing area of electronics, computers and telecommunications.

ISSPA has been attracting researchers and engineers by its special technical features of focusing on advanced signal processing technologies that enhance adaptability and intelligence of telecommunication systems and computer technology.

The response to the ISSPA'99 call-for-papers has been overwhelming. After the review, the Technical Program Committee accepted more than 250 papers for regular presentations. Unfortunately, many fine proposals could not be accommodated. For those authors whose papers were declined, we express our regret and thank them for their interest.

The heart of ISSPA'99 is, as always, the comprehensive and high quality technical program which include leading edge technical sessions and tutorials. In addition, ISSPA'99 has invited remarkable plenary speakers who are leading current trends in technology development.

To provide participants with better access to paper presentations, we have tried to optimise the distribution of oral and poster sessions. The oral presentations are distributed in 17 sessions, while the poster presentations are distributed in 10 sessions. For the oral papers, 15 minutes are allocated to each. For the posters, during the first 10 minutes, the authors will provide a minute brief introduction to their posters.

We are indebted to the Plenary Speakers, Tutorials Presenters, and all the contributing authors for their efforts and contributions to make the Conference a success. Special thanks should go to the staff within the School of Electrical and Electronics Systems Engineering, Queensland University of Technology and the staff from ICMS Pty Ltd for their continuous support and help in preparing the Conference booklet and the Proceedings.

Last but not least, we thank the members of the Organising Committee for all their efforts and the members of the Technical Program Committee for devoting time and effort to careful reviewing of the submitted papers.

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