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on Advances in Signal Processing
and Artificial Intelligence**

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Sergey Y. Yurish, *Editor*
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Foreword

On behalf of the ASPAI' 2019 Organizing Committee, I introduce with pleasure these proceedings devoted to contributions from the 1st International Conference on Advances in Signal Processing and Artificial Intelligence (ASP AI' 2019) held in Barcelona, Spain.

Advances in artificial intelligence and signal processing are driving the growth of the artificial intelligence market as improved appropriate technologies is critical to offer enhanced drones, self-driving cars, robotics, etc. The two major factors enabling market growth are emerging artificial intelligence technologies and growth in intelligent signal processing. Today, more and more sensor manufacturers are using machine learning to sensors and signal data for analyses. The machine learning for sensors and signal data is becoming easier than ever: hardware is becoming smaller and sensors are getting cheaper, making Internet of things devices widely available for a variety of applications ranging from predictive maintenance to user behavior monitoring. Whether we are using sounds, vibrations, images, electrical signals or accelerometer or other kinds of sensor data, we can build now richer analytics by teaching a machine to detect and classify events happening in real-time, at the edge, using an inexpensive microcontroller for processing - even with noisy, high variation data.

The ASPAI' 2019 conference has been launched to provide a forum for open discussion and development of emerging artificial intelligence and appropriate signal processing technologies focused on real-world implementations by offering Hardware, Software, Services, Technology (Machine Learning, Natural Language Processing, Context-Aware Computing, Computer Vision and Signal Processing). The goal of the conference is to provide an interactive environment for establishing collaboration, exchanging ideas, and facilitating discussion between researchers, manufacturers and users.

The conference is organized by the *International Frequency Sensor Association (IFSA)* in technical cooperation with media partners – *IOS Press* (journal 'Integrated Computer-Aided Engineering') and *World Scientific* (International Journal of Neural Systems). The conference program provides an opportunity for researchers interested in signal processing and artificial intelligence to discuss their latest results and exchange ideas on the new trends.

In this year, we have got more than 60 submissions from which 41 papers (2 keynote, 33 oral and 6 posters) were selected for presentation at the Conference covering theory, design, device technology, and applications of signal processing and artificial intelligence. To accommodate this range of interests, the 1st ASPAI' 2019 Conference was organized in four dedicated regular sessions, one special session on 'Driver Monitoring using Machine Learning' and one poster session.

The proceedings contains all papers of both: oral and poster presentations. We hope that these proceedings will give readers an excellent overview of important and diversity topics discussed at the conference. Selected, extended papers will be submitted to the media partners' journals and IFSA's open access 'Sensors & Transducers' journal based on the proceeding's contributions.

We thank all authors for submitting their latest work, thus contributing to the excellent technical contents of the Conference. Especially, we would like to thank the individuals and organizations that worked together diligently to make this Conference a success, and to the members of the International Program Committee for the thorough and careful review of the papers. It is important to point out that the great majority of the efforts in organizing the technical program of the Conference came from volunteers.

Prof., Dr. Sergey Y. Yurish
ASP AI' 2019 Conference Chairman

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