IVMSP 2020

IEEE 14th Image, Video, and Multidimensional Signal Processing Workshop

**23-26 June 2020
Nafplio, Greece**

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Image Processing in Digital Pathology

SPECIAL SESSION

Call for Papers

The 2020 IEEE 14th Image, Video, and Multidimensional Signal Processing Workshop (IVMSP 2020) will be held in June 23-26, 2020 in Nafplio, the capital of the first Hellenic Republic (Greece). It will bring together leading experts from academia and industry to share the most recent and exciting advances in image, video, and multidimensional signal processing and analysis.

The field of digital pathology is rapidly evolving. Improved microscopy scanning technology, storage capacity, and data transfer speeds has recently introduced digitalization of tissue samples, producing histological whole-slide images (WSI). The work of a pathologist in many hospitals today, however, still consists in a large degree of manual analysis, studying tissue samples in a microscope as the primary tool for cancer diagnostics. The global cancer burden is rising and the workload of pathology departments world wide is increasing, welcoming more automated solutions.

The combination of digitalization of histological slides with the recent advances and breakthroughs in machine learning is reinventing analysis of histological slides and cancer diagnostics. Various approaches using combinations of image processing and machine learning is emerging to deal with different tasks and challenges such as segmentation of cancerous areas, detection of metastases, grading, diagnosing, counting and characterizing of cell nuclei, colour deconvolution, standardization and quality ensurance. Different approaches have been suggested for these challenges, including neural network architectures as well as model based approaches.

The aim of this Special Session is to host original papers and reviews on recent research advances within all areas of image processing and machine learning in digital pathology.

Welcomed submissions would be falling in the following wide range of topics:

- Image processing and machine learning for tissue segmentation and classification
- Image processing and machine learning for detection of cancerous regions, hot spots and metastases
- Machine learning architectures for histological image processing
- Classification of cancer grade and state from WSI
- Colour deconvolution and standardization of WSI
- Quality assessment of WSI
- Segmentation and carachterization of cell nuclei

PAPER SUBMISSION
The language of the Workshop is English. Prospective authors are invited to submit full-length papers (up to 4 pages for technical content including figures, tables, references and one optional 5th page containing only references). IEEE templates for the paper format, and "no show" policy apply. Authors should indicate one or more of the above listed categories that best describe the topic of the paper. Submitted papers will be peer-reviewed by at least two experts in the field. To maximize visibility and impact as early as possible, all accepted papers will be published in IEEE Xplore through Open Preview and will be freely accessible and downloadable in final format beginning one month before the Workshop. In addition to the technical program, a social program will be offered to the participants and their companions. It will provide an opportunity to meet colleagues and friends against a backdrop of outstanding natural beauty and rich cultural heritage in one of the best-known international tourist destinations.

SPECIAL SESSION ORGANISERS
- Prof. Kjersti Engan, University of Stavanger, Norway
- Prof. Valery Naranjo, the Polytechnical University of Valencia, Spain

IMPORTANT DATES
- Submission of full papers – April 2, 2020
- Notification of acceptance – April 20, 2020
- Author advance registration – May 2, 2020
- Camera-ready paper submission – May 2, 2020