

Dear colleagues,

We are pleased to announce that the 2nd ICPRAI conference (International Conference on Pattern Recognition and Artificial Intelligence), held in Zhongshan City, China, May 12-15, 2020, will host a special session on **“Influence of Combining Machine Learning and Mathematical Morphology for Image Processing and Analysis”**.

We invite you to submit your contributions to this session using the track “SS_Puybureau”. The **deadline for submission is December 15**. If you intend to submit a paper, we need you to send a title with names and affiliations of the authors to the following email address: elodie@lrde.epita.fr or directly on Easychair **before November 25**. More information on the submission process can be found on the website of ICPRAI 2020: <https://users.ensc.concordia.ca/~icprai20/>

Kind regards, Elodie Puybureau, special session chair
Nicolas Passat, special session co-chair

Pitch of the special session

For more than 50 years, mathematical morphology (MM) has developed strong theoretical and methodological approaches for image processing and analysis, mainly dedicated to filtering and segmentation. In the meantime, a wide range of techniques and tools were developed in the area of machine learning (ML), mainly dedicated to clustering and classification. Both domains remained mostly disconnected for a long time, despite few tentative of collaborative work, e.g. for designing neural networks. Recent advances in mathematical morphology (with the development of hierarchical and graph-based approaches) and in machine learning (with the raise of deep-learning strategies) have shed light on various promising connections between these two domains. These connections, strengthened by progress in the understanding of the theoretical foundations of various paradigms of machine learning, are now leading the MM and ML communities to more deeply investigate the collaborative links and methodological interconnections developed in both domains. This special session takes place in this new context. Its main purpose is indeed to gather researchers (from universities or industries) in image processing and analysis, computer vision, mathematical morphology and machine learning, and to establish a state-of-the art and a first international meeting dedicated to the research on those methods in the different communities and countries, and stimulate new interactions on this subject. This special session will provide a forum of discussion on the most recent advances in the field, but also preliminary works to guide future research directions. The fields concerned by this session cover a large range of subjects, from theoretical to applicative topics, such as computer vision and image processing, medical imaging, 2D and 3D imaging, reconstruction, denoising, multimodality, remote sensing, image indexation and understanding.