Special Issue

Machine Learning and Big Data Analytics in Image Processing

Message from the Guest Editor

The surge of image data from medical imaging, surveillance, autonomous systems, and social media presents significant opportunities and challenges in image processing. This Special Issue explores the integration of machine learning and big data analytics to enhance image analysis, interpretation, and application. ML techniques, including deep learning, reinforcement learning, and generative models, are transforming tasks like classification, segmentation, object detection, and enhancement. Meanwhile, big data technologies, such as Hadoop, Spark, and cloud-based solutions, enable scalable processing of large, heterogeneous datasets. Key topics include real-time image processing, computational efficiency, and managing high-dimensional data while ensuring accuracy. Applications span healthcare , autonomous vehicles , environmental monitoring, and security. Issues like data privacy, model interpretability, and ethical AI deployment are also critical. This Special Issue welcomes research on theoretical advancements, practical implementations, and case studies, emphasizing scalability, robustness, and real-world impact.

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Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

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