

# Special Issue

## Recent Advances in Deep Convolutional Neural Networks for Semantic Segmentation

### Message from the Guest Editor

Neural networks are mathematical models inspired by the function and architecture of the human brain. At the present time, Deep Convolutional Neural Networks (DCNNs) are at the forefront of the revolution in artificial intelligence. This is mainly due to their ability to learn from large amounts of data. DCNNs have an excellent capacity to extract very complex features from raw data. These are the main reasons why DCNNs have shown promise in many applications, including face recognition, object recognition, medical image analysis, forensic analysis, security and surveillance systems, and autonomous systems, amongst others. Since the resurgence of deep learning, many issues and challenges have been faced: overfitting, exploding, and vanishing gradients; a lack of training data; imbalanced data; performance saturation; instability; mode collapse; local minima; double descent; and computational complexity. Given this context, this Special Issue aims to present and highlight recent advancements in DCNNs applied to semantic segmentation. Furthermore, this Special Issue will cover methodologies based on new mathematical models and their application to the task of semantic segmentation.

### Guest Editor

Prof. Dr. Jose Ruiz-Pinales

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### Deadline for manuscript submissions

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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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