



# Call for Papers

## Journal of Real-Time Image Processing

### Special Issue on

## Deep Learning for Real-time Information Hiding and Forensics

#### Overview:

With rapid development of network technologies and the wide use of digital camera devices, digital multimedia (in particular image and video data) has grown tremendously on the Internet. However, by using various powerful multimedia processing tools, the multimedia data is getting easier to be illegally copied, and forged. Consequently, the copyright and privacy protection of multimedia data have been an urgent requirement in the field of multimedia security. To prevent multimedia data from unauthorized use and privacy invasion, two typical approaches have been proposed: information hiding and digital forensics. Both of these approaches have been applied successfully in many digital security applications and they can also complement each other nicely. However, in cloud computing and big data environments, there exist massive amount of multimedia data and new multimedia data keeps growing exponentially. In this context, the information hiding and digital forensics face many new challenges. For example, how to conduct information hiding and digital forensics in real-time, and how to rapidly process a large amount of multimedia data?

Nowadays, with the development of Graphic Processing Unit (GPU) processors and the availability of large-scale training datasets such as ImageNet, the deep learning techniques have gained success in the field of machine learning and computer vision, and have shown to outperform many traditional techniques. Although deep learning techniques require computationally extensive off-line training process, with the help of powerful GPUs, they show high efficiency at online testing stage, which enables achieving real-time computation performance for a variety of computer vision tasks. Also, it is possible to explore the deep learning techniques for various real-time multimedia security applications, such as real-time information hiding and digital forensics in order to achieve desirable performances in the terms of both accuracy and efficiency.

The aim of this special issue is to call for papers that address the challenges of real-time information hiding and digital forensics with deep learning techniques. We solicit original research and survey papers addressing the topics listed below (but not limited to):

**Topics:**

- Real-time Image/Video Hiding by Deep Learning
- Real-time Image/Video Forensics by Convolutional Neural Networks (CNN) or Other Machine Learning Networks.
- Real-time Content-based Image Copy Detection, Near-Duplicate Image Detection/Retrieval, and Image Forgery Detection by Learning-Based Features
- Real-time Image/Video Watermarking and Steganography by Generative Adversarial Networks (GAN) or Other Machine Learning Networks
- Real-time Image Secret Sharing by Deep Learning
- Real-time Image/Video Content Protection and Analysis by Deep Learning
- Real-time Visual Privacy and Forensics by Deep Learning
- Real-time Steganalysis by Deep Learning
- Real-time Coverless Image/Video Data Hiding with Semantic Analysis or Multimedia Synthesis by Deep Learning

**Important Dates:**

Manuscript submission deadline: March 1st, 2019

Notification of acceptance: April 1st, 2019

Submission of final revised paper: May 1st, 2019

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