



Call for Papers

Special Section on Optimized Image/Video Coding based on Deep Learning

Submission date: **June 15th 2021**, Publication date: **December 2021**

Motivation

Over the past several years, we have witnessed the impressive progress of image/video coding schemes based on deep learning approaches. Despite a short history of this field, end-to-end trained coding models have evolved as a promising nonlinear signal processing framework and recent works have shown that learned models can achieve significant performance gains over traditional methods. However, there are still unsolved problems and compelling research challenges remaining to be addressed, e.g.: 1) energy efficient and fast architectures for low-complexity image/video encoding and decoding, which is essential for practical applications; 2) improved compression for different target applications such as object detection or high-quality video streaming for machine-to-machine communication; 3) novel network architectures designed for higher coding efficiency to better exploit bandwidth requirements; 4) variable rate control and efficient bit allocation with deep learning frameworks, which are barely studied yet. Hence, this special section invites original contributions addressing important innovative and timely challenges of the community, which is deep learning for image/video coding in energy-aware real-world environments.

This special section provides a forum for presenting the latest advances in algorithms, implementations, and applications related to optimized image/video coding technologies based on deep learning.

Specific Topics of Interest (but are not limited to):

- Efficient and fast hardware/network architectures for learning-based image/video coding
- Automated machine learning for image/video coding
- End-to-end learning framework for image/video coding
- Quality assessment models reflecting human perception of quality and their applications in image/video coding
- Deep learning techniques for optimizing traditional image/video codecs
- Image/Video Coding for machine vision applications

The Publication Fees/Article Processing Charges (APCs) for the accepted papers will be completely subsidized by the CAS Society. Hence these publications will be completely free of charge to the authors.

Publication Schedule

Manuscript submission deadline	June 15, 2021
First-round revision notification due	Aug. 20, 2021
Revised manuscripts due	Sept. 20, 2021
Second-round revision notification due	Oct. 20, 2021
Final manuscript due	Nov. 20, 2021
Online publication	Dec. 2021

Guest Editors

Zhibo Chen, Univeristy of Science and Technologu of China, China. chenzhibo@ustc.edu.cn

Christian Herglotz, Friedrich-Alexander University Erlangen-Nürnberg (FAU), Germany. christian.herglotz@fau.de

Marco Cagnazzo, Institute Polytechnique de Paris, France. cagnazzo@telecom-paristech.fr

Instructions for authors: Manuscripts must be submitted online using the IEEE OJ-CAS Manuscript Template via Manuscript Central at: <https://mc.manuscriptcentral.com/oj-cas> During submission, the answer to question "Type" in Step 1 of the submission process, is "Video Coding".