



International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics

Venue: BNM Institute of Technology, Bengaluru, India



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Venue : BNM Institute of Technology, Bengaluru, Karnataka, India

Call for Special Session Proposals

SPECIAL SESSION ON

Intelligent Vision Systems and Edge Computing for Image Sensor Communications

SESSION ORGANIZERS:

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EDITORIAL BOARD: (Optional)

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SESSION DESCRIPTION:

Image sensor communication (ISC), a subset of visible light communication (VLC) system that uses a high-speed image sensor as a reception device. Owing to a massive number of pixels and spatial separation of multiple light sources, ISC can be used in an outdoor mobile environment, suitable for automotive applications. Edge computing is a network paradigm in which data processing takes place at the network's edge, close to the data source. By reducing the number of switches and hosts between the data's source and destination, processing image data on the edge reduces system latency and jitter. The time between image capture and action grows as data packets travel through each network node. Edge computing reduces system latency even further by removing the time it takes to transfer image data. Image sensor communication and edge computing are viable research domains and are under fast development. Because of their wide applications and rich research contents, many practitioners and academics are attracted to work in these areas. Image sensor communication (ISC), a subset of visible light communication (VLC) system that uses a high-speed image sensor as a reception device. Developments in Artificial Intelligence have seen its use extend to more areas, creating demand for data that is specifically intended for machines rather than humans. Visible-light communication systems that utilize image sensors as reception devices are referred to as image-sensor communication (ISC) systems. Nowadays, every smartphone and portable device is equipped with a camera, and the heart of these image-capturing devices is an image sensor. ISC utilize the image sensor as a reception device of a visible-light-modulated signal. Owing to a massive number of pixels and spatial separation of multiple light sources, ISC can be used for many real-time applications. The specific requirements of these systems impact image sensor technology. Challenges in complexity and variability of multimedia data have led to revolutions in Intelligent Vision Systems and Edge Computing techniques. Multimedia data, such as digital images, audio streams and motion video programs, exhibit richer structures than simple, isolated data items. With the rapid development of image sensor communications, the collection and modification of wireless multimedia data have become greatly convenient and easy. Advances in computing techniques, data acquisition technology,

hardware, and networks have mutually promoted the development of image analysis approaches. Many Intelligent Vision Systems and edge computing, signal/image processing, and data mining algorithms have been successfully developed for high speed image sensor communications. Intelligent Vision Systems and edge computing for image sensor communications introduces techniques that are particularly powerful and effective for accomplishing common tasks of image sensors.

The focus of this special issue is to present recent advances, original ideas, techniques, algorithms, and the like belonging to a myriad of research areas in Intelligent Vision Systems and edge computing and its applications in image sensor communications with the final goal of sharing their specific challenges and solutions for image communications.

RECOMMENDED TOPICS:

Topics to be discussed in this special session include (but are not limited to) the following:

- Edge-Computing-Based Communication technologies
- Broadband and multimedia systems and applications, with a focus on increased service variety and interactivity
- Image Sensor Communications for future
- Intelligent Vision Systems and edge computing frameworks and its architecture, analysis
- Visible Light Communications for Automotive Intelligence
- Security, safety, edge computing liability / reliability issues in wireless communication systems and applications.
- Dependability measurement, modelling, evaluation, and tools for intelligent vision systems.
- Markov edge computing and Monte Carlo Simulation based Distributed Deep Learning
- Development of open dataset for image sensor communications
- Applying Machine learning techniques in hybrid Intelligent systems
- Genomic Signal Processing and Statistical Signal Processing.