Special Issue

Computing-Enabled Imagers for Pervasive Computer Vision

Message from the Guest Editor

Computer vision and its applications are ubiquitous in today's technological era, with applications including computational photography, image super resolution, autonomous driving, AR/VR, medical diagnosis, robotics, space exploration, etc. Imaging technologies dominated by CMOS image sensors are often the generators of pixel-based data that are fed to computer vision (CV) algorithms. However, the extraordinary demand for CV applications and the associated explosion in data transfer and computational requirements has necessitated decentralized processing of CV workloads, starting at the source of pixel data, i.e., the imager sensor itself. Several approaches have recently been explored that include in-sensor and in-pixel computing, neural-network-embedded cameras, 3D sensing, time-of-flight sensors, compressive imaging, coded exposure pixels, high-speed, high-sensitivity cameras, and event-based dynamic vision sensors among others. These novel computing-enabled sensors are supported by new algorithms that are cognizant of the underlying camera hardware.

Guest Editor

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Sensors is a leading journal devoted to fast publication of the latest achievements of technological developments and scientific research in the huge area of physical, chemical and biochemical sensors, including remote sensing and sensor networks. Both experimental and theoretical papers are published, including all aspects of sensor design, technology, proof of concept and application. Sensors organizes Special Issues devoted to specific sensing areas and applications each year.

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