Special Issue

Multimodal Sensory Intelligence

Message from the Guest Editors

For decades, research and development have aimed to convert data to information (what, when, where, and who), to knowledge (how), and to insight (why). Current AI models mainly focus on training and testing with massive data, which is an oversimplified model of learning. In nature, multimodal sensing is a part of intelligence fundamental to all creatures. It is the capacity to sense a target, be aware of the situation, and adapt to changes. The basic algorithms include sensor fusion, signal registration, visualization, interaction, and reasoning. Multimodal sensory intelligence is a missing piece of the puzzle in today's generative AI and deep learning paradigms that have a broader impact on autonomous systems, human-robot interaction, and cyber-physical systems. We anticipate that sensory intelligence will require less data, be faster in execution, adapt to changes, and be simpler in algorithms, with reasoning in qualitative physics and semantic or visual explanations. And overall, it will be able to solve the problems that prevailing data science cannot.

Guest Editors

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