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Sommario/riassunto — The interdisciplinary studies between neuroscience and information science have greatly promoted the development of these two fields. The achievements of these studies can help humans understand the essence of biological systems, provide computational platforms for biological experiments, and improve the intelligence and performance of the algorithms in information science. This research topic is focused on the computational modeling of visual cognition, body sense, motor control and their integrations. Firstly, the modeling and simulation of vision and body sense are achieved by 1) understanding neural mechanism underlying sensory perception and cognition, and 2) mimicking accordingly the structures and mechanisms of their signal propagation pathways. The achievement of this procedure could provide neural findings for better encoding and decoding visual and somatosensory perception of humans, and help robots or systems build humanoid robust vision, body sensing, and various emotions. Secondly, the modeling and simulation of the motor system of the primate are achieved by mimicking the coordination of bones, muscles and joints and the control mechanisms of the neural system in the brain and spinal cord. This procedure could help robots achieve fast, robust and accurate manipulations and be used for safe human-computer interaction. Finally, by integrating them, more complete and intelligent systems/robots could be built to accomplish various tasks self-adaptively and automatically.