Special Issue

Sensing to Cognition: The Evolution of Robotic Vision

Message from the Guest Editors

Robotic vision has evolved from basic sensing to advanced cognitive functions. Powered by deep learning and visual reasoning, robots are integral to tasks in autonomous navigation, industrial automation, and human–robot interaction. This Special Issue focuses on recent advances that bridge low-level perception and high-level cognition, especially in dynamic, unstructured environments. Particular attention is given to embodied visual perception, where perception is shaped by physical interaction with the environment, and to multi-robot visual collaboration, enabling distributed robotic systems to jointly interpret and respond to their surroundings. We invite original research and reviews in areas including deep/reinforcement learning for robotic perception; 3D vision and spatial reasoning; visual understanding in human–robot interaction; vision-based scene analysis and decision-making; embodied perception; and multi-robot coordination. This Special Issue seeks to foster interdisciplinary exchange and highlight innovations that drive intelligent visual systems from perception to cognition.

Guest Editors

Prof. Dr. Xiangjun Zou

Prof. Dr. Xiaojuan Li

Dr. Junfeng Gao

Dr. Fengyun Wu

Deadline for manuscript submissions

30 November 2025

MDPI

About the Journal

Message from the Editor-in-Chief

Machines is an international, peer reviewed journal on machinery and engineering. It publishes research articles, reviews and communications.
Our aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. There is no restriction on the length of the papers. Full experimental and/or methodical details must be provided.
There are, in addition, unique features of this journal: Manuscripts regarding research proposals and research ideas will be particularly welcomed; Electronic files or software regarding the full details of the calculation and experimental procedure - if unable to be published in a normal way can be deposited as supplementary material.

Editor-in-Chief

Prof. Dr. Antonio J. Marques Cardoso
CISE - Electromechatronic Systems Research Centre, University of Beira Interior, Calçada Fonte do Lameiro, P-6201-001 Covilhã, Portugal

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