# Special Issue

# Artificial Intelligence within Robot Swarms

### Message from the Guest Editor

Swarm robotics is a research field that focuses on the combination of swarm intelligence and robotics. Swarm intelligence describes the mechanisms of intelligence achieved at the system level resulting from individuals' simple behaviors and intensive interactions. Swarm intelligence is observed across different natural systems, including ant colonies, bird colonies, etc. Importing swarm intelligence to simple robots evolves into a promising distributed and autonomous system that shows great potential in several application areas, collectively referred to as swarm robotics. Today, despite the significant advantages of robot swarms, they are mostly still restricted to the laboratory. This is due to a number of challenges including the safety of these systems, the dynamic environments in which they are deployed, their coordination under realistic circumstances, and their communication mechanisms. To overcome such challenges and advance swarm robotics research, these systems can benefit from numerous approaches developed recently in the field of artificial intelligence, including machine learning algorithms, complex networks, advanced decision-making algorithms, and others.

### Guest Editor

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## Editor-in-Chief

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