

Tentative Outline (Preliminary Proposal of Thematic Issue)

Special/Thematic Issue for The Chinese Journal of Artificial Intelligence

Title of the Thematic Issue: “Applications of Artificial Intelligence Techniques in Robotics”

Guest Editor: Dr. S. Ramabalan

- **Scope of the Thematic Issue:**

AI techniques contributed a lot in software side and machine learning. Also it has many proved applications in all fields. Robotics field needs some sophisticated intelligence techniques and methods for its further expansion. Mainly intelligence is needed for sub-fields of robotics like motion planning, learning, sensing, decision-making, knowledge representation and reasoning, perception, interaction, computation of kinematic and dynamic parameters, controlling actions, etc. Robot's intelligence is based on its knowledge-base and controller. Autonomous decision making is an important activity of an intelligent robot. So AI techniques can do a revolution in robotics field. Making of fully autonomous and intelligent robots is mainly relying on AI techniques. So AI techniques play a major role in robotics field. This special issue welcomes papers that present AI techniques for increasing intelligence and decision-making skill of robots. This creates newer directions of research and having more impacts in academics and society.

Keywords: Robotics, AI techniques, Machine learning, Intelligent robotics, Autonomous robots, 5G techniques

Sub-topics:

- Applications of Conventional AI techniques, Newer AI techniques, Evolutionary algorithms, Swarm algorithms, Genetic Algorithm and its variants, PSO and its variants, Ant colony optimization and its variants, ANFIS, ANN, Advanced AI techniques, Newer optimization algorithms, Hybrid AI techniques, Machine learning techniques, Bioinspired artificial intelligence in all robotics fields.
- Applications of AI and 5G techniques in the fields: autonomous unmanned systems, autonomous unmanned system networks, Crowd sensing and edge computing, autonomous control, real-time object detection, real-time perception, recognition and tracking, autonomous decision-making, map building and localization, motion planning, path tracking and motion control, intelligence testing and verification, Brain-computer interface, etc.

Schedule:

- Thematic issue submission deadline: **31 May 2023**

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