



Special Issue

AI-driven Algorithms and Applications in the Dynamic and Evolving Environments

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AIM and Scope

The rapid development of Information & Communications Technology promotes the industrial revolution, more and more industrial practices have introduced the intelligent algorithms based on machine learning, reinforcement learning, neural networks, fuzzy systems, etc. As known, these algorithms have achieved good performance on games, recognition, and other applications in the ideal controlled simulation environment. However, there is big gap between controlled simulation environment and real evolving environment, which results in the unsatisfactory performance of the typical algorithms in practical environments.

The intelligent algorithms and applications in the dynamic and evolving environments should have very high adaptability and generalization ability. For example, in the unmanned driving, minor environmental changes may cause huge potential safety hazards of life and property. In another typical scenario of Underwater Internet of things (UIoT), the dynamic and uncertain marine environment may cause equipment damage, causing huge economic losses. Therefore, improving the robustness, adaptability of algorithms and systems, and putting forward new solutions to meet the requirements of self-developing, self-organized and evolving systems in the practical applications are critical to promote the intelligent real industrial applications.

This special issue focuses on the intelligent algorithms with environmental uncertainty in real industrial applications, aiming to address the problems of evolving system modelling, clustering, classification, prediction and control in non-stationary, unpredictable environments. It aims to call for the state-of-the-art research on dynamic and evolutionary environments in intelligent algorithms and practical applications. The original research and review articles are both welcomed.

Many network modeling methods, computing algorithms, and signal processing technologies have recently been successfully developed and applied to multimedia steaming and processing in IoT with Edge Intelligence. Motivated by the inclination to collect a set of recent advances and results in this research topic, we want to provide a platform for researchers to exchange their innovative ideas on modeling and computing solutions for Multimedia Steaming and Processing in Internet of Things with Edge Intelligence, and introduce interesting utilizations of modeling and computing algorithms for some application, such as agriculture IoT, video surveillance, self-predictive electric drives, and so on.



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Suggested Topics

Papers are welcomed on the following topics but not confined to:

- Robustness of environment modeling in evolutionary system
- Robustness of artificial intelligence algorithms
- Adaptability of neural networks and systems
- Prediction of intelligent algorithms in dynamic environments
- Improvement of robustness in deep learning algorithms
- Improvement of robustness in reinforcement learning algorithms
- Interpretability of predictive models in dynamic environments
- Application of AI technology in Industrial Internet of Things
- Uncertainty in Intelligent Transportation System
- The dynamic environment of Underwater Internet of Things
- Applications and migration of intelligent algorithms
- Machine learning methods in industrial applications
- Artificial intelligence algorithms in industrial applications

Important Dates

30 September 2022

Paper Submission Deadline

31 December 2022

Author Notification

10 January 2023

Final Paper Submission Deadline

20 January 2023

Acceptance Notification