**DESCRIPTION**

Artificial Intelligence (AI) is playing a major role in the fourth industrial revolution and we are seeing a lot of evolution in various machine learning methodologies. **AI techniques** are widely used by the practicing engineer to solve a whole range of hitherto intractable problems. This journal provides an international forum for rapid publication of work describing the practical application of **AI methods** in all branches of **engineering**. Submitted papers should report some novel aspects of AI used for a real world engineering application and also validated using some public data sets for easy replicability of the research results.

Focal points of the journal include, but are not limited to innovative applications of: Internet-of-things and cyber-physical systems Intelligent transportation systems & smart vehicles Big data analytics, understanding complex networks Neural networks, fuzzy systems, neuro-fuzzy systems Deep learning and real world applications Self-organizing, emerging or bio-inspired system Global optimization, Meta-heuristics and their applications: Evolutionary Algorithms, swarm intelligence, nature and biologically inspired meta-heuristics, etc. Architectures, algorithms and techniques for distributed AI systems, including multi-agent based control and holonic control Decision-support systems Aspects of reasoning: abductive, case-based, model-based, non-monotonic, incomplete, progressive and approximate reasoning Applications of chaos theory and fractals Real-time intelligent automation, and their associated supporting methodologies and techniques, including control theory and industrial informatics Knowledge processing, knowledge elicitation and acquisition, knowledge representation, knowledge compaction, knowledge bases, expert systems Perception, e.g. image processing, pattern recognition, vision systems, tactile systems, speech recognition and synthesis Aspects of software engineering, e.g. intelligent programming environments, verification and validation of AI-based software, software and hardware architectures for the real-time use of AI techniques, safety and reliability Intelligent fault detection, fault analysis, diagnostics and monitoring Industrial experiences in the application of the above techniques, e.g. case studies or benchmarking exercises

*Engineering Applications of Artificial Intelligence* publishes: Survey papers/tutorials Contributed papers — detailed expositions of new research or applications Case studies or software reviews — evaluative and descriptive reviews of existing available AI software systems, discussing the experience gained and lessons learnt from using or developing AI systems for engineering applications IFAC EAAI Forum — problems arising from engineering practice, needing to be solved by somebody; solutions to problems discussed in this forum or elsewhere; critiques of a position or claim found in the literature
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INTRODUCTION
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Artificial Intelligence (AI) techniques are now being used by the practicing engineer to solve a whole range of hitherto intractable problems. This journal provides an international forum for rapid publication of work describing the practical application of AI methods in all branches of engineering.

Focal points of the journal include, but are not limited to innovative applications of:

- Real-time intelligent automation, and their associated supporting methodologies and techniques, including control theory and industrial informatics,
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- Applications of chaos theory and fractals,
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- Perception, e.g. image processing, pattern recognition, vision systems, tactile systems, speech recognition and synthesis,
- Aspects of software engineering, e.g. intelligent programming environments, verification and validation of AI-based software, software and hardware architectures for the real-time use of AI techniques, safety and reliability,
- Intelligent fault detection, fault analysis, diagnostics and monitoring,
- Self-organizing, emerging or bio-inspired system,
- Industrial experiences in the application of the above techniques, e.g. case studies or benchmarking exercises.

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- Survey papers/tutorials.
- Contributed papers - detailed expositions of new research or applications.
- Brief papers - short discussions of new technical concepts or developments, or new applications of existing techniques.
- Case studies or software reviews - evaluative and descriptive reviews of existing available AI software systems, discussing the experience gained and lessons learnt from using or developing AI systems for engineering applications.
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