



ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE

The International Journal of Intelligent Real-Time Automation

AUTHOR INFORMATION PACK

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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.

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For more details on the International Federation of Automatic Control (IFAC), visit their home page at <http://www.ifac-control.org>

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Automation and control engineers, electronic and electrical engineers.

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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,
- 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,
- Metaheuristics and their applications in intelligent automation: Genetic Algorithms, Ant Colony Optimization, Particle Swarm Optimization, etc.,
- Knowledge processing, knowledge elicitation and acquisition, knowledge representation, knowledge compaction, knowledge bases, expert systems,
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- 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.

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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Types of paper

Engineering Applications of Artificial Intelligence publishes

- 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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