Computational Intelligence and Neuroscience

Special Issue on
Computer Intelligence and Neuroscience for Industry 4.0 Applications

CALL FOR PAPERS

This Special Issue targets the latest developments of computational and computer intelligence and of neuroscience for Industry 4.0, the first a priori engineered and the fourth 'Industrial Revolution.' Focusing on smart manufacturing and cyberphysical systems, efforts in Industry 4.0 have so far lacked smart design and business elements for manufacture that are necessary in completing this upgrade and value chain. In addressing these challenges, the Special Issue encourages and reports applications of computer intelligence and neuroscience to Industry 4.0 in the era of cloud computing and data science (dubbed the "Fourth Paradigm of Science").

Computational intelligence, primarily comprising artificial neural network and learning systems, evolutionary computation, and fuzzy logic, is a set of nature-inspired modelling and optimisation approaches to complex real-world problems, to which traditional approaches such as first principles' modelling and explicit statistical modelling are ineffective or incapable of addressing. Computational intelligence has recently been realised in embedded hardware and also on analogue computers. Related to this, neuroscience investigates the structure and function of the human brain: how it encodes and represents the environment and how it makes decisions and controls actions. It can be used to frame hypotheses that are tested directly by means of biological or psychological experiments.

We are soliciting outstanding, high-quality, original research papers as well as reviews focused on the applications of these methodologies to shaping and advancing a smart design and business environment for Industry 4.0. Papers addressing how to revolutionise the way that designs are created and machines are built for Industry 4.0, thereby leading to a step improvement in manufacturing autonomy and industrial efficiency, performance, and competitiveness, will be most welcome.

Potential topics include, but are not limited to:

- ▶ Computer-automated, machine-learning, or intelligent design for Industry 4.0
- ▶ Smart designs for manufacture using computational intelligence or neuroscience
- ▶ Cyberphysical systems using computer intelligence, machine-learning, or neuroscience
- ▶ Industry 4.0 business informatics using computational intelligence, learning, or neuroscience
- ▶ Marketing with computational intelligence and data science for Industry 4.0 value chain
- ▶ Computational intelligence and data science applications to marketing for design
- ▶ Neuroscience applications to interactive product design and marketing for design

Authors can submit their manuscripts via the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/cin/cinia/.

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