

Special Session on Computational Intelligence for Industry 4.0 at:



Aim:

This Special Session is dedicated to the latest developments of computational intelligence (CI) for Industry 4.0, the first *a-priori* engineered (and the fourth) 'Industrial Revolution'. Focusing on smart manufacturing and cyber-physical systems so far, efforts in Industry 4.0 have lacked smart design and business elements for manufacture that are necessary in completing this unprecedented upgrade of value chain. Computational intelligence has however provided an extra-numeric, as well as efficiently-numeric, tool to realise this goal. The Special Session therefore encourages and reports applications to Industry 4.0 in the era of interactive cloud computing and data science.

Scope:

Computational intelligence, primarily comprising artificial neural network and learning systems, evolutionary computation, and fuzzy logic and systems, 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 statistical or curve fitting are ineffective or incapable of addressing. We are soliciting original research papers or reviews that would shape and advance a smart design and business environment for Industry 4.0. Papers addressing how to revolutionise the way that smart designs are created and smart machines are built, thereby leading to a step improvement in manufacturing autonomy and industrial efficiency, performance and competitiveness, will be most welcome.

Main Topics:

You are warmly invited to submit an original paper on (but are not limited to) the topics

- Computer intelligence or machine learning for cyber-physical systems;
- Computer-automated design, machine learning or intelligent search for Industry 4.0;
- Computational intelligence for smart design for smart manufacture;
- Computational intelligence for Industry 4.0 in cloud and big data environments;
- Computational intelligence and data science applications to marketing for design;
- Computational intelligence and data science for marketing and service in Industry 4.0 value chain;
- Computational intelligence or other learning techniques for Industry 4.0 business informatics and risk management;
- Computational intelligence for Industry 4.0 digital economy;
- Evolutionary distributed or cloud computing for interactive product design and marketing;
- Evolutionary big data interaction for predictive product design and marketing.

Submission by 15 January 2016 at Congress website <http://iee-cis.org/conferences/cec2016/upload.php>.

LaTeX and MS-Word Templates are available here: <http://wcci2016.org/submission.php>

Conference Proceedings:

This is a cross-disciplinary and CI applications Special Session. Therefore, a submitted paper (if duly accepted and presented) will be published under one of the three conference proceedings (IEEE CEC, Fuzzy-IEEE, or IJCNN) that is most appropriate to the paper. Such decision will be made by the Special Session Organizers in consultation with the Special Session Chair and one of the three Conference Chairs.

Extension to Journal Publication:

The authors of successful papers will be invited to extend their works for immediate rolling publication in:

- Special Issue on "[Energy-Efficient Design for Smart Manufacturing and Industry 4.0](#)", *Energies* (Impact Factor 2.1), or
- Special Issue on "[Computer Intelligence and Neuroscience for Industry 4.0 Applications](#)", *Computational Intelligence and Neuroscience* (Impact Factor 0.6)

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