Special Session NF_SS4: Type-2 Fuzzy Logic: Theory and Applications

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Description

This Special Session will consist of papers that integrate type-2 fuzzy logic with different Soft Computing (SC) methodologies in the design of hybrid intelligent systems for different areas of application. Each of the SC methodologies has advantages and disadvantages and many problems have been solved, by using one of these methodologies. However, many real-world complex industrial problems require the integration of several of these methodologies to really achieve the efficiency and accuracy needed in practice. The Special Session will include applications on the following areas: Robotic Dynamic Systems, Non-linear Plants, and Manufacturing Systems.

The topics of this session include but are not limited to the following areas:

1. Development of innovative hybrid methods combining type-2 fuzzy logic with SC techniques to solve problems related to the control of non-linear dynamical systems.

2. New type-2 fuzzy logic techniques and technologies.

3. Operations on interval and full type-2 fuzzy sets

4. Interval and full type-2 fuzzy systems

5. Extension type-2 fuzzy to type-n fuzzy sets

6. Type reduction methods

7. Direct and indirect approaches to type-2 fuzzy systems and modeling

8. Type-2 fuzzy for Big Data modeling

9. Type-2 fuzzy pattern recognition

10. Supervised and Unsupervised Type-2 fuzzy deep learning methods

11. Type-2 fuzzy functions

12. Type-2 fuzzy numbers generation techniques

13. Successful new applications to real-world problems of type-2 fuzzy logic and soft computing techniques.

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