Facultad de Informática
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Uncertain information analysis and intelligent decision support in perception based complex systems

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entrada libre hasta completar el aforo

resumen:

Humans have a remarkable capability to perform a wide variety of complex decision tasks under various uncertain data and/or information based on perceptions. Decision support systems (DSS) with such perceptions often involve the use of traditional mathematical tools and modern artificial intelligent techniques. Due to the potential difficulties of dealing effectively with perception based risk assessment and management, information (or data) obtained by any means will be of very different nature. It may be heuristic or incomplete or data that is either of unknown origin or may be out of date or imprecise, or not fully reliable, or conflicting, and even overloaded. To allow an adequate interpretation of the information and to reach a conclusion by both traditional mathematical tools and modern artificial intelligent techniques, an integrated intelligent DSS that is able to deal with various uncertainties in real time is urgently needed. Hence, it is considered advantageous to have a sound and reliable mathematical framework available that provides a basis for synthesis across multidimensional information of varying quality, especially to deal with information that is not quantifiable due to its nature, and that is too complex and ill-defined, for which the traditional quantitative approach (e.g., the statistical approach) does not give an adequate answer. In this talk, we will present basic information (data) presentations with different formats such as numerical values, interval values, linguistic values, continuous linguistic values, interval linguistic values and distribution based linguistic values.

sobre Da Ruan:

He obtained his PhD in Math, from Ghent University, Belgium, in 1990. After Postdoc at the Belgian Nuclear Research Centre (SCK•CEN) from 1991-93, he has been the principal investigator for research projects on intelligent control and decision making for complex (nuclear) systems. His major research interests lie in the areas of mathematical modelling, computational intelligence methods, uncertainty analysis, decision support systems to information management, safety and security related fields. He serves as Regional editor for Europe of Int. J. of Intelligent Automation and Soft Computing, Co-editor-in-chief of Int. J. of Nuclear Knowledge Management, Editor-in-chief of Int. J. of Computational Intelligence Systems. He is a full-time research professor at SCK•CEN, Guest Professor at the Dept. of Applied Math. and CS in Ghent University and at the Dept. of Applied Economics in Hasselt University, respectively, in Belgium, and Adjunct Professor in the Faculty of Information Technology at University of Technology, Sydney in Australia.