



## **A Special Session on Linguistic Decision Making**

**organized by Francisco Herrera, Luis Martínez and Rosa M Rodríguez**

### **Description**

In many real decision situations defined under uncertain environments, with imprecise information, is straightforward the use of linguistic information due to the nature of different aspects of the decision problems. Fuzzy linguistic approach and Computing with Words (CW) provides the tools and methodology to deal with words or sentences defined in a natural or artificial language instead of numbers, it emulates human cognitive processes to improve solving processes of problems dealing with uncertainty. Consequently, fuzzy linguistic approach and CW have been applied as modelling and computational basis for linguistic decision making, because it provides tools close to human beings reasoning processes related to decision making, which improve the resolution of decision making under uncertainty as linguistic decision making.

All Decision Making, Fuzzy Linguistic Approach and Computing with Words have recently attracted much attention in which, novel mathematical foundations and new decision models raised to be applied in different decision fields such as multi-criteria decision making, decision analysis, evaluation processes, etc.

### **Objectives and topics:**

This invited session aims at providing an opportunity for researchers working in both research areas to discuss and to share their new ideas, original research results and practical experiences. More specifically, we expect you to have any contribution with the focus on the use of linguistic modelling in decision making. The topics of this special session are as follows:

- Linguistic decision analysis
- Linguistic expression domains to represent preferences
- Linguistic hesitant for modeling preferences
- Multi-criteria and group decision making
- Selection and consensus models with linguistic information
- Linguistic decision making in engineering evaluation, resource management and transfer, Industry applications, sensory evaluation, evaluation and recommendation, investments applications and risk assessment, ...

### **Short biography of the organizers:**

**Francisco Herrera** (<http://decsai.ugr.es/~herrera>) received his M.Sc. in Mathematics in 1988 and Ph.D. in Mathematics in 1991, both from the University of Granada, Spain. He is currently a Professor in the Department of Computer Science and Artificial Intelligence at the University of Granada. He has been the supervisor of 35 Ph.D. students. He has published more than 290 papers in international journals.

He currently acts as Editor in Chief of the international journals "Information Fusion" (Elsevier) and "Progress in Artificial Intelligence" (Springer). He acts as editorial board member of a dozen of journals, among others: International Journal of Computational Intelligence Systems, IEEE Transactions on Fuzzy Systems, Information Sciences, Knowledge and Information Systems, Fuzzy Sets and Systems, Applied Intelligence, Knowledge-Based Systems, Memetic Computation, and Swarm and Evolutionary Computation.

He received the following honors and awards: ECCAI Fellow 2009, IFSA Fellow 2013, 2010 Spanish National Award on Computer Science ARITMEL to the "Spanish Engineer on Computer Science", International Cajastur "Mamdani" Prize for Soft Computing (Fourth Edition, 2010), IEEE Transactions on Fuzzy System Outstanding 2008 and 2012 Paper Award (bestowed in 2011 and 2015 respectively), 2011 Lotfi A. Zadeh Prize Best paper Award of the International Fuzzy Systems Association, 2013 AEPIA Award to a scientific career in Artificial Intelligence (September 2013).

His current research interests include bibliometrics, computing with words in decision making, information fusion, evolutionary algorithms, evolutionary fuzzy systems, biometrics, data preprocessing, data mining, cloud computing and big data.

**Luis Martínez** received the M.Sc. and Ph.D. degrees in Computer Science, both from the University of Granada, Spain, in 1993 and 1999, respectively. Currently, he is Full Professor of Computer Science Department and Head of

ICT Research Centre at the University of Jaén. His current research interests are linguistic preference modeling, decision making, fuzzy logic based systems, computer aided learning, sensory evaluation, recommender systems and electronic commerce. He co-edited nine journal special issues on fuzzy preference modelling, soft computing, linguistic decision making and fuzzy sets theory and published more than 60 papers in journals indexed by the SCI as well as 30 book chapters and more than 100 contributions in International Conferences related to his areas. He is member of the European Society for Fuzzy Logic and Technology, IEEE. Co-Editor in Chief of the International Journal of Computational Intelligence Systems and an Associated Editor of the International Journal of Fuzzy Systems and Information Fusion. He serves as member of the journal Editorial Board of the Journal of Universal Computer Sciences and the Scientific World Journal. He received the IEEE TRANSACTIONS ON FUZZY SYSTEMS Outstanding 2008 Paper Award (bestowed in 2011). And he is Guest Professor in the Southwest Jiaotong University and honourable professor in Xihua University both in Chengdu (China).

**Rosa M. Rodríguez** received the B.Sc, M.Sc. and PhD degrees in Computer Science, all of them from the University of Jaén in 2006, 2008 and 2013 respectively. Currently, she is assistant project in the Faculty of Informatics of the Technology University of Vienna. Her research interests include linguistic preference modelling, decision making, decision support systems and fuzzy logic based systems. She has published 12 papers in International journals indexed by the SCI. She is Editor Assistant in the International Journal of Computation Intelligence Systems. And she got the best student paper award in the International Conference on Machine Learning and Cybernetics held on Tianjin (China) in 2013.

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### **Important Dates**

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- Paper submission  
**February 8, 2015**
- Notification of acceptance for papers  
**March 23, 2015**
- Camera-ready paper submission  
**April 21, 2015**
- Early registration deadline  
**April 23, 2015**
- Conference  
**August 2-5, 2015**

### **Submission of the papers**

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Please submit your papers for this special session to both the organizers and conference online submission system (<http://fuzziieee2015.org/>) by indicating the title of the special session.