

Keynote Speech in SOMET 2022

Title: On Fuzzy and Linguistic Decision-Making: Scenarios and Challenges

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Abstract:

This talk takes a brief tour through the main trends, studies, methodologies and models developed around the field of fuzzy decision-making in the last decades. Fuzzy decision making approaches allow to deal with real-world decision problems of varying complexity where humans exhibit vagueness and imprecision to assess information about decision alternatives, criteria, etc. Specifically, we address a triple goal in this talk. Firstly, we introduce the main representation paradigms that have arisen from fuzzy set theory to model assessment information at different levels of expressive richness and complexity. Secondly, we examine three core scenarios around which fuzzy decision-making methods have been developed: multi-criteria decision-making, group (and consensus-driven) decision-making, and multi-person multi-criteria decision-making. Lastly, we discuss new complex decision-making scenarios that emerged in recent years where decisions should be guided by the “wisdom of the crowd”, highlighting their challenges and reflecting on much needed key guidelines for future research in the field.

Bio:

Enrique Herrera-Viedma Enrique Herrera-Viedma is Professor of the Dept. of Computer Science and Artificial Intelligence at the University of Granada (UGR) and he is currently serving as Vice-Rector for Research and Knowledge Transfer at the UGR. He is Fellow IEEE and he was Vice-President for Publications in IEEE System Man and Cybernetics Society and now he is VP for Cybernetics, founders of the IEEE Trans. in Artificial Intelligence, and Highly Cited Researcher by Clarivate Analytics in Computer Science and Engineering in 2014-2020. He has published more than 300 papers in JCR journals, his h-index is 102 in Google Scholar (>40000 citations) and 85 in WoS (>25000 citations). In 2013 he published in the prestigious journal Science about the new role of digital libraries in the era of the information society. He is a member of the panel of experts of the national project evaluation agencies in Portugal, Switzerland, France, and Kazast’an; and Member of the European Committee of Experts for the evaluation of strategic information infrastructure projects in Europe (ESFRI- European Strategy Forum on Research Infrastructures), since November 2017. He has also been guest lecturer in plenary lectures and tutorials in multiple national and international conferences related to Artificial Intelligence such as: 4th Int. Workshop on Preferences and Decisions, 2003, Trento (Italy); Modeling Decision for Artificial Intelligence. 2004, Barcelona (Spain); AGOP 2005, Lugano; 4th EUSFLAT & 11th LFA Conference, Barcelona, 2005; Third Int. Workshop of Artificial Intelligence. ; ESTYLF 2010, Huelva; ; Int. IEEE Intelligent Systems 2014, Poland; IEEE SMC 2014; EUSFLAT 2017, Poland; SOMET 2017, Japan; PIC 2018, Nanjing, China; BAFI 2018, Chile; IPMU 2018, Cadiz. He is Associated Editor in several AI journals like IEEE TFS, IEEE ITS, IEEE TSMC-Syst, Knosys, ASOC, Fuzzy Opt. and Decision Making, Information Sciences, Soft Computing.