

Title: “A software tool for modeling Fuzzy Cognitive Maps”

Fuzzy Cognitive Maps (FCMs) are a suitable knowledge based methodology for modeling and simulating dynamic systems. From the structural perspective, an FCM can be understood as a fuzzy digraph that describes the behavior of a physical system in terms of concepts (i.e., states, variables or entities). Such concepts involve a precise meaning for the physical system and are connected by signed and weighted causal relationships.

In spite of the theoretical advances reported in FCM literature, there is a lack of real software tools for modeling and simulating FCM-based systems. On the other hand, existing software tools fail in providing advanced options to adjust the parameters that define the modeling behavior. The gap between the theoretical advances and the development of accurate and mathematically sound FCM-based systems advocates for the implementations of software tools with more complete experimentation features.

This talk is devoted to presenting a software tool for designing, learning and simulating FCM-based models. The advantages of this tool rely on the inclusion of numerous simulation facilities and machine learning algorithms, which are supported by a friendly visual interface. As far as is known, there is no software tool for developing FCM-based systems with such flexibility.

Prof. Koen Vanhoof's Biography



Professor Koen Vanhoof is a project leader of the Business Informatics research group at Hasselt University, Belgium. His major research interests are in the areas of data mining, statistics, knowledge engineering and modeling, computational intelligence methods, decision support systems, process modeling, process mining and soft computing. The application domains are information management, marketing and finance, mobility and traffic safety, logistics.

He has authored and co-authored over 100 peer-reviewed journal articles, about 8 book chapters and 90 conference papers. He is a member of the international editorial board of the International Journal of Information Theory and Applications. Currently he is responsible for the courses Business Intelligence, Business Process Modeling, Knowledge Discovery Management and ICT Project. Professor Dr. Vanhoof has been guest lecturer at different universities all over the world and has successfully promoted over 20 PhD students until now.