2nd Day Opening Keynote Lecture

Knowledge Management for Decision Support:
A Data Mining and Decision Modelling Approach
Professor Marko Bohanec

Scientific Councilor, Jožef Stefan Institute, Ljubljana, Slovenia, and
Professor of Computer Science, University of Nova Gorica, Slovenia

Keynote Overview:
Knowledge Management (KM) is the process of capturing, distributing, and effectively using organizational knowledge, in order to create benefit and competitive advantage. For this purpose, an organization should be able to learn, retrieve, represent, and store its knowledge, as well as to use it for making important decisions. For recurring complex decisions, it is often of a great benefit if the tacit and explicit knowledge are formulated and operationalized in a form of a decision support system (DSS). In this talk, we will investigate the process that leads from the identification of a decision problem to the implementation of a DSS, which involves several KM activities: knowledge acquisition, formulation, representation, verification, and implementation. Specifically, this talk will focus on two approaches, which can be used individually or in combination: (1) Data Mining, which views corporate databases as a historical record of past decisions and develops decision models from them, and (2) Decision Modelling, which proceeds by acquiring and operationalizing decision models from the knowledge of experts. These approaches will be – together with lessons learned – explained and illustrated through real-world case studies in disease management in health care, and food control.

Main Topics:
- Knowledge synthesis for decision support
- Data mining: learning from past decisions
- Decision modelling: capturing knowledge from experience
- Operationalization and lessons learned in practice

About the Keynote Presenter:
Marko Bohanec is a leading Slovenian researcher in the field of decision support models and systems. He works at the Department of Knowledge Technologies at the Jožef Stefan Institute. Also, he is a professor of computer science at the University of Nova Gorica. He is one of the pioneers of qualitative multi-attribute modeling, which combines the fields of decision analysis and artificial intelligence to support people in making complex decisions. He is a co-author of the method DEX and computer program DEXi, which are used for decision support nationally and internationally. In the last decade, he has been involved as a decision support expert in European projects on the production, distribution, and quality control of food and feed (projects ECOGEN, SIGMEA, Co-Extra, & DECATHLON), and disease management in health-care (PD_manager & HeartMan). He has co-authored more than 60 journal papers.