



## INVITED SESSION SUMMARY

**Title of Session: Decision making-methods and algorithms – problems and applications**

**Name, Title and Affiliation of Chair:**

chair: Konrad Kułakowski, dr hab., assoc. prof., AGH University of Science and Technology, Poland  
co-chair: prof. Ryszard Janicki, McMaster University, Canada  
co-chair: prof. Michael Soltys, California State University Channel Islands, USA

**Details of Session (including aim and scope):**

Decisions must be based on data. Moreover, good decisions must be made with good data. As argued in Kai Fu Li's *AI Superpowers: China, Silicon Valley, And the New World Order*, we are immersed in data produced by companies, institutions, and individuals. Data contains latent information from which decision makers draw insights. In this process, they are assisted by decision methods and algorithms to better understand possible alternatives, goals, constraints, and evaluation criteria. However, questions arise as to how these methods should make use of this data. What data will lead to the right decisions and when will the decisions made be credible.

This session is concerned with two aspects of decision making:

- 1) Methods and algorithms: there are many applications of such systems, from recruitment systems, through weather forecasting to scoring systems. These systems are software based, and rely on a wide variety of methodologies, ranging from pairwise comparison, optimization or searching. The goal of our session is to bring together a wide spectrum of scientists interested in both the theory and the practice of the topical field of data-driven decision making.
- 2) Decision pipeline: the scheme by which data is ingested, cleaned, analyzed, and finally deployed. While the first aspect contributes the algorithms for decision making, this second aspect examines the infrastructure and frameworks that provide the environment where those decision procedures can be executed.

**Main Contributing Researchers / Research Centres (tentative, if known at this stage):**

**Website URL of Call for Papers (if any):**

<http://www.kulakowski.org/kes2021/index.html>

**Email & Contact Details:** [pcmethod@agh.edu.pl](mailto:pcmethod@agh.edu.pl)