PRO-VE 2025

26th IFIP/SOCOLNET Working Conference on Virtual Enterprises

Hybrid Human-AI Collaborative Networks

PRO-VE 2025 Special Session

AI and Simulation-Supported Decision-Making in Collaborative VUCA Environments

Scope

As highlighted in the keynote address *"Leveraging Trust and Digitalization for Dynamic Collaboration in the VUCA World"* at Pro-Ve 2024, decision-making is becoming increasingly complex across industries due to volatile, uncertain, complex, and ambiguous (VUCA) conditions. Whether managing supply chain disruptions, responding to global crises, or driving organizational transformation and innovation, decision-makers must navigate rapidly changing environments, unpredictable trends, and incomplete information. Systems simulation and Artificial Intelligence (AI) have emerged as critical transformative tools. They leverage predictive analytics, natural language processing, machine learning, and AI-powered immersive visualizations to enhance decision-making, optimize resource allocation, and improve adaptability in uncertain conditions. This special session brings together researchers, practitioners, and industry experts to explore the role of AI and simulation-supported tools in shaping decision-making frameworks within collaborative networks. Discussions will focus on emerging trends, real-world applications, and the ethical, managerial, technical, business, and environmental challenges of implementing these technologies in high-uncertainty environments.

Session Organizers

- Alessandro Bertoni, Blekinge Institute of Technology, Department of Mechanical Engineering, alessandro.bertoni@bth.se
- Shaun West, Lucerne University of Applied Sciences, School of Engineering and Architecture shaun.west@hslu.ch
- Marco Bertoni, Blekinge Institute of Technology, Department of Mechanical Engineering, marco.bertoni@bth.se
- Koteshwar Chirumalla, Digital and Circular Industrial Services (DigiCircle) research group, Mälardalen University, koteshwar.chirumalla@mdu.se

Topics/ Keywords

- AI and Simulation-Supported Tools for Collaborative Decision-Making:
  - o Tools and methodologies to enhance teamwork and cross-organizational collaboration in uncertain and complex settings.
  - o Challenges and opportunities of applications in Business-to-Business and Business-to-Consumer context.
  - o Leveraging AI for rapid decision-making in emergencies, such as pandemics, natural disasters, or supply chain disruptions.
- Predictive and Prescriptive Analytics: AI applications for forecasting trends, identifying risks, and recommending optimal courses of action or coping strategies.
- Simulation and Collaborative Digital Twins: The role of simulation-based decision tools and digital twins in preparing for uncertain scenarios and creating suitable digital services and business models.
- Best practices in Human-AI Interaction ensuring trust and usability.
- Ethical and Governance Challenges: Addressing bias, transparency, and accountability.
- Use Cases and Applications: Industry-specific examples of AI and Simulation-Supported Digital Tools for decision-making in healthcare, logistics, automotive, energy, or urban planning, covering electrification, automation, sharing/circular economy, and sustainability
- Scalability and Adaptability.

Submission procedure

Special sessions are included in the main Conference and follow the same reviewing process.
1 Mar 2025 - Special session proposal
11 Apr 2025 - Abstract submission (optional)
9 May 2025 - Full paper submission
20 Jun 2025 - Results notification
4 Jul 2025 - Camera-ready version
27-29 October, 2025 - Conference

Acceptance of papers is based on the **full paper** (up to **16** pages). Each paper will be evaluated by three members of the International Program Committee.

When submitting on the web site, you must indicate the special session's name.
Submission procedure via Easychair available on: http://www.pro-ve.org, with copy by email to the chairs of the special session.