PRO-VE 2025 Special Session

Industry 5.0 Principles for Hybrid Human-AI Collaborative Networks

Scope

As industries make their slow transition towards the Industry 5.0 paradigm, a growing emphasis is being placed on fostering human-centric, resilient, and sustainable systems where humans and artificial intelligence collaborate seamlessly.

Industry 5.0 envisions a future where advanced AI technologies do not replace human workers but instead augment their capabilities, fostering synergy that enhances creativity, decision-making, and adaptability. This evolution calls for new frameworks, models, and strategies to integrate Industry 5.0 principles into hybrid human-AI collaborative networks effectively.

This special session focuses on the convergence of Industry 5.0 values-human-centricity, sustainability, and resilience-with the design and management of hybrid human-AI collaborative networks. It aims to explore how these principles can guide the integration of AI technologies into collaborative organisational ecosystems, ensuring that human expertise remains central to decision-making while leveraging AI's computational power and scalability.

Key areas of interest include designing human-centric AI systems that prioritise transparency, trust, and ethical considerations; adaptive and resilient collaborative networks capable of responding to dynamic changes and crises; and developing sustainable collaborative ecosystems that align with societal and environmental goals. The session also invites contributions addressing the challenges of fostering human creativity and emotional intelligence in industry alongside AI capabilities, overcoming resistance to AI integration, and rethinking governance and policy frameworks for hybrid networks.

Session Organizers

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Topics/ Keywords

- Industry 5.0 and its shift towards human-centric and sustainable collaborative manufacturing practices.
- Emphasis on human-machine interaction and the importance of scalable and flexible technology within the software-defined Network-in-a-Box (NIB) architecture to facilitate hybrid and unified service deployments.
- Exploration of the role of Edge AI in achieving sustainability goals through real-time data processing, collaborative decision-making, and resource optimisation.
- Discussion on designing resilient and collaborative human-machine teams for Industry 5.0, complementing the joint cognitive systems approach with the concept of operations design, actor-network theory, and ethically aware design

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 have to indicate the name of the special session.
Submission procedure via Easychair available on: http://www.pro-ve.org, with copy by email to the chairs of the special session.