



PRO-VE 2025

26th IFIP/SOCOLNET Working Conference on Virtual Enterprises
Hybrid Human-AI Collaborative Networks

PRO-VE 2025 Special Session

AI-driven Sliding Work Sharing for Human-Robot / Human-AI Collaboration

Scope

AI and robotics hold immense potential for revolutionizing working conditions across various sectors, including industry, logistics, healthcare, construction, agriculture, and education. These technologies can assist human operators in tasks ranging from demanding manual labour to complex decision-making, ultimately enhancing efficiency and reducing employees' stress. Industry 5.0 aims to foster better communication and seamless collaboration between humans, AI, and robots. This vision seeks to improve organizational processes by increasing work efficiency, reducing employees' stress, and boosting confidence in decision-making.

Key Areas of Focus:

- **Sliding Work Sharing:**
This concept involves dynamically allocating tasks between humans and robots based on current needs and capabilities, ensuring a balanced and efficient workload.
- **Intelligent Multi-Robot Systems (MRS):**
MRS involves multiple interconnected robots working together to accomplish complex tasks that are beyond the capabilities of a single robot. These systems are intelligently orchestrated to maximize efficiency.
- **Multi-Human Multi-Robots collaboration:**
Developing technologies and mechanisms where a multi human-robot collaboration and intelligent multi-agent systems (humans and intelligent machines) seamlessly work together.
- **Human-Centric Design:**
Prioritizing human needs and trustworthiness in AI and robotic systems is essential. This includes adaptable task execution, human-aware task planning, and the ability to respond dynamically to changing work environments.
- **Simulation-Based Testing:**
Before real-world deployment, simulation-based testing helps identify potential issues and optimize the performance of AI and robotic systems.

Applications Across Domains:

The benefits of AI and robotics can be applied across various sectors, each with unique challenges that can be addressed through tailored solutions. By focusing on the listed key areas, organizations can create more efficient, adaptable, and human-centric work environments.

Session Organizers

Ana Correia, ATB – Institut für angewandte Systemtechnik Bremen GmbH, correia@atb-bremen.de
Sebastian Scholze, ATB – Institut für angewandte Systemtechnik Bremen GmbH, scholze@atb-bremen.de

Topics/ Keywords

- Multi Human-Multi-Robot/AI
- Sliding Work Sharing
- AI trustworthiness
- Human-aware task planning
- Adaptable and customisable task execution
- Simulation based testing

Submission procedure

Special sessions are included in the main Conference and follow the same reviewing process.
1 Mar 2025 - Special session proposal



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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 **18** 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.

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