teaming.ai

Final Conference: Managing Human-AI Collaborations within Industry 5.0 Scenarios via Knowledge Graphs

A summary of TEAMING.AI[i] project's outcomes and lessons learned

2024-05-23

This workshop will focus on knowledge graph-based technologies and approaches that enable the management of human intervention in AI-assisted manufacturing processes in Industry 5.0 under potentially changing conditions to maintain or improve the overall performance of the system. Whereas knowledge graphs-based systems are commonly based on a static view with their structure fixed at design time, the European project TEAMING.AI addresses the dynamic challenge of inline human-AI collaboration in industrial settings. In this context we discuss approaches and lessons learned, addressing general challenges like the modelling of domain expertise with particular focus on vertical knowledge integration, as well as challenges linked to an industrial knowledge graph of choice, such as its dynamic population and the late shaping of knowledge graph embeddings as the foundation of relational machine learning models which have emerged as an effective tool for exploiting graph-structured data to infer new insights. In addition, legal and ethical aspects are taken into account from the perspective of European AI law.

Agenda

09.00 – 09.15	Welcome by Bernhard Moser, SCCH	
09.15 - 10.45 | Session A: On requirements, human factors and legal aspects		
09.15 - 09.45	Keynote: CISC Project	Maria Chiara Leva, TU Dublin
09.45 - 10.05	Human Factors and Challenges	Maria Chiara Leva, TU Dublin **OR** Hector Estrada Lugo, TU Dublin
10.05 - 10.25	Legal aspects	Pedro Demolder, Timelex
10.25 - 10.45	Preparing for digitalization in Industry	Javier Dominguez, Ideko
Break 5'		
10.50 - 12.20 | Session B: Knowledge graph-based approach to human-AI collaboration		
10.50 - 11.20	Keynote: Current trends in the Semantic Web	Heiko Paulheim, Uni Mannheim
11.20 - 11.40	Integration of vertical knowledge and process models	Elmar Kiesling, WU Vienna
11.40 – 12.00	From a static view to dynamics	Franz Krause, Uni Mannheim
12.00 – 12.20	From a software engineering perspective	Agastya Silvina, SCCH
Break 30'		
12.50 - 14.20 | Session C: Application integration and proof of concept		
12.50 – 13.20	Keynote on application potentials of Human-AI interactions	Santiago Muíños Landín, AIMEN
13.20 – 13.40	AI integration requirements from the view of the industry domain	Alejandro Espert, Industrias Alegre
13.40 - 14.00	Integration aspects (Machine Learning)	Nazim Kemal Ure, ITU Istanbul
14.00 – 14:20	Application for ergonomic risk detections	Gernot Stübl, Profactor
Break 5'		

14.25 - 15.55 | Session D: Exploitation potentials and lessons learned		
14.25 - 14.55	Keynote on the need for explainability of AI systems	Leonardo Napoletani, Spindox Maurizio Mongelli, CNR-IEIIT Alessia Paglialonga, CNR-IEIIT
14.55 – 15.15	Teaming.AI prototype demo	Franz Krause, Uni Mannheim
15.15 - 15.35	Exploitation potentials 1	Lukas Fischer, SCCH **OR** Bernhard Moser, SCCH
15.35 - 15.55	Exploitation potentials 2	Gernot Stübl, Profactor
15.55 – 16.00 | Conference Closing by Bernhard Moser, SCCH		