

Human-Centric Decision Support Systems in Industry 5.0: A Machine Learning-Based Approach

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Abstract : This study explores the development of human-centric decision support systems tailored for Industry 5.0 production paradigms. By leveraging machine learning-based recommender systems, the proposed solution optimizes real-time production settings, accounting for both machine parameters and individual operator preferences. Integrating key performance indicators (KPIs) such as Overall Equipment Effectiveness (OEE) ensures sector-independent applicability and eco-efficiency. This paper also investigates how the "Tweeting Factory" framework enhances communication between system components, facilitating adaptive and human-aware process improvements. Experimental results demonstrate the potential for increased operational efficiency and reduced resource consumption, paving the way for autonomous production systems.

Keywords : decision support systems, industry 5.0, machine learning, human-centric

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