When Industry meets Trustworthy AI: A Systematic Reviewof AI for Industry 5.0

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Abstract*: We are focusing on analyzing the current industrial evolution paradigm, aiming to make it more sustainable and trustworthy. In Industry 5.0, Artificial Intelligence (AI) is one of the key technologies utilized to develop services with a sustainable, human-centric, and resilient approach. Understanding the factors enabling AI adoption in industry, while adhering to trustworthy principles, involves examining its incorporation in early stages, assessing its impact, and identifying emerging trends. Additionally, we aim to grasp the challenges and gaps in transitioning from Industry 4.0 to Industry 5.0,providing insights into the industry's readiness for new technologies. This offers practitioners new avenues to explore for fostering the adoption of trustworthy AI within the sector.*

CCS Concepts: General and reference → Surveys and overviews; Social and professional topics → Government technology policy; • Applied computing → Industry and manufacturing; • Computing methodologies → Artificial intelligence

Keywords: Trustworthy AI, Industry 5.0, Artificial Intelligence, Technology Readiness Level

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