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Sommario/riassunto

This book is essential for any leader seeking to understand how to leverage intelligent automation and predictive maintenance to drive innovation, enhance productivity, and minimize downtime in their manufacturing processes. Intelligent automation is widely considered to have the greatest potential for Industry 4.0 innovations for corporations. Industrial machinery is increasingly being upgraded to intelligent machines that can perceive, act, evolve, and interact in an industrial environment. The innovative technologies featured in this machinery include the Internet of Things, cyber-physical systems, and artificial intelligence. Artificial intelligence enables computer systems to learn from experience, adapt to new input data, and perform intelligent tasks. The significance of AI is not found in its computational models, but in how humans can use them. Consistently observing equipment to keep it from malfunctioning is the procedure of predictive maintenance. Predictive maintenance includes a periodic maintenance schedule and anticipates equipment failure rather than responding to equipment problems. Currently, the industry is struggling to adopt a viable and trustworthy predictive maintenance plan for machinery. The goal of predictive maintenance is to reduce the amount of unanticipated downtime that a machine experiences due to a failure in a highly automated manufacturing line. In recent years, manufacturing across the globe has increasingly embraced the Industry 4.0 concept. Greater solutions than those offered by conventional maintenance are promised by machine learning, revealing precisely how AI and machine learning-based models are growing more prevalent in numerous industries for intelligent performance and greater productivity. This book emphasizes technological developments that could have great influence on an industrial revolution and introduces the fundamental technologies responsible for directing the development of innovative firms. Decision-making requires a vast intake of data and

customization in the manufacturing process, which managers and machines both deal with on a regular basis. One of the biggest issues in this field is the capacity to foresee when maintenance of assets is necessary. Leaders in the sector will have to make careful decisions about how, when, and where to employ these technologies. Artificial Intelligence and Machine Learning for Industry 4.0 offers contemporary technological advancements in AI and machine learning from an Industry 4.0 perspective, looking at their prospects, obstacles, and potential applications.
