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Sommario/riassunto	Artificial Intelligence (AI) is currently one of the most talked-about technologies, both among scientists and in public media. Several factors have contributed to its development in recent years. The first is access to vast quantities of data, such as in the industrial field, the advent of Industry 4.0, which promotes automation and data sharing in several technologies. Another factor is the continuous improvement in computing power thanks to the development of ever more powerful processors and the optimization of algorithms. With these two limitations removed, the focus of most AI developments is on the quality of predictions. The integration of AI into the industrial domain represents an exciting new frontier for innovation. Just as AI has transformed many other sectors, its application to mechanical technologies enables significant improvements in design,

manufacturing and quality control processes: from computer-aided design (CAD) to printing parameter optimization, defect detection and real-time monitoring. This type of technology requires computer systems, data with management systems and advanced algorithms which can be used by AIs. In mechanical engineering, AI offers many possibilities in mechanical construction, predictive maintenance, plant monitoring, robotics, additive manufacturing, materials, vibration, etc. *Methods and Applications of Artificial Intelligence* is dedicated to the methods and applications of AI in mechanical engineering. Each chapter clearly sets out the techniques used and developed and accompanies them with illustrative examples. The book is aimed at students but is also a valuable resource for practicing engineers and research lecturers.
