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9.6.4 More Consistent and Accurate Than Humans.

Sommario/riassunto

The book provides a comprehensive study of how new technological advances utilize robots and Cobots (collaborative robots that work safely alongside humans) to increase manufacturing efficiency. Industry 5.0 focuses on using collaborative robots, or cobots, enabling users to design with greater freedom. This book, structured into 18 chapters and three sections - Fundamentals; Applications; and Challenges - reflect the current and emerging market trends that shape industrial growth. Each chapter explores how businesses incorporating hardware and software like AI, cognitive computing, blockchain, IIoT, and more--are capitalizing on these innovations to maintain a competitive edge. The research and development in the areas of technology has increased the cost-effectiveness and acceptance of these IoT-enabled devices in many different industries. Various sectors including manufacturing, healthcare, transportation, and agriculture sectors, have begun incorporating robots and cobots into their operations. They are aiming to increase their productivity, reduce the downtime of their equipment, and optimize resource utilization. The individual chapters examine the following subjects: Investigation on Deployment of Microservices for Swarm Intelligence of Collaborative Robots • Cobot-Aided System for Hydroponically Grown Plants • Low/No-Code Software Development of Cobots Using Advanced Graphical User Interface • Role of Cobots Over Industrial Robots in Industry 5.0 Activities • Cobot Collaboration in the Healthcare Industry • Robotic Arm for Industry Automation • Artificial Intelligence-Driven Cobots for Innovative Industry 5.0 Workforce • Comprehensive Analysis on Design, Working, and Manufacturing of Soft Robots • Workforce for Industry 5.0: The Work of Future and the Future of Work • Security Issues and Trends of Industrial Robots and Cobots • Aviation Bots for Decongesting Airports • Self-Contained Study and Evolution of Cobots in Intelligent Transportation Systems • Smart Architecture for Data Analytics in Collaborative Robots • Contribution of Blockchain Technology for the Cobot's Cybersecurity Issues • Security Issues and Trends of Industrial Robots and Cobots • Cloud-

Based Cobots for Industry 5.0: A Human-Centric Solution • Future Workforce for Industry 5.0. Audience The book's primary audience is researchers and post-graduate students in robotics and cobots, industrial engineers, production and manufacturing engineers working on artificial intelligence and logistics.