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Descrizione fisica	1 online resource (VI, 364 p. 131 illus., 117 illus. in color.)
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Nota di contenuto	1. Introduction to Artificial Intelligence -- 2. Understanding of AI in dental field with technical aspects -- 3. Artificial intelligence from Medicine to Dentistry -- 4. Applications of Artificial Intelligence in Dentistry -- 5. Applications of AI in endodontics and restorative dentistry -- 6. Artificial Neural Networks for the Design Optimization of Implants -- 7. Outlook for AI in Oral Surgery and Periodontics -- 8. AI in orthodontics -- 9. AI on Oral Mucosal lesions detection -- 10. Impact of AI in Obstructive Sleep Apnea -- 11. Artificial Intelligence in Temporomandibular Joint Disorders -- 12. Artificial Intelligence for 3D Printing and Bioprinting -- 13. Artificial intelligence in Dental Education -- 14. Advantages, Disadvantages, and Limitations of AI in Dental Health -- 15. Applications of Machine Learning and Artificial Intelligence in the Covid-19 Pandemic -- 16. Medico-legal Problems of Artificial Intelligence -- 17. Deep learning in image processing – Part I: Types of neural networks, image segmentation -- 18. Deep learning in image processing – Part II: Image enhancement, reconstruction, and registration -- 19. Future Perspectives on AI in Dentistry.
Sommario/riassunto	This comprehensive book focuses on various aspects of artificial intelligence in dentistry, assisting dentists, specialists, and scientists in advancing their understanding, knowledge, training, and expertise in this field of artificial intelligence. Readers will learn about AI-supported pathways for the diagnosis and treatment of dental caries, periodontal bone loss, impacted teeth, periapical lesions, crown, and root fractures,

working length determination, and detecting root and canal morphology, TMJ disorders, detection of obstructive sleep apnea, oral mucosal lesions, and many more. Prediction tasks include the estimation of retreatment needs and third molar eruption. Critical information on applications of AI in the field of Oral and Maxillofacial Radiology, Implants, Endodontics, Prosthodontics, Restorative dentistry, Oral surgery, Periodontics, and Orthodontics. Gain valuable insight into studies applying machine learning based on Machine Learning (ML), DeepLearning (DL), and Artificial Neural Networks (ANN). Explore the technical aspects and medical applications of AI in dentistry. Additionally, discover cutting-edge topics like 3D and bioprinting applications of AI and its integration into dental education. All the chapters provide thorough, evidence-based data on AI and its implications in oral health, bridging the gap between knowledge and practical application. The book explains the advantages, disadvantages, and limitations of AI in dental health. Delve into the medico-legal aspects of AI to navigate this cutting-edge landscape responsibly. Learn about applications of Machine Learning and Artificial Intelligence in the Covid-19 Pandemic. Extensive information on deep learning in image processing, including various types of neural networks, image segmentation, enhancement, reconstruction, and registration. This book concludes with an exploration of AI's exciting potential and future perspectives in the dental field, paving the way for a new era of oral healthcare. Don't miss out on this unique resource for AI in Dentistry, which empowers you to stay at the forefront of innovation and embrace the AI revolution in Dentistry. Be prepared for the future of dentistry.