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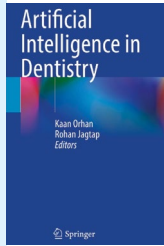
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BOOK REVIEW



ARTIFICIAL INTELLIGENCE IN DENTISTRY

Editors: Kaan Orhan and Rohan Jagtap;
 2023; Springer Cham;
 £103.50 (eBook); pp. 364;
 ISBN: 978-3-031-43827-1

Imagine a world where dental x-rays become crystal clear, aiding our diagnosis with pinpoint accuracy, or imagine detecting oral mucosal lesions simply through clinical photos. That is the future that AI is creating for dentistry, and this book *Artificial intelligence in dentistry* is your roadmap to get there. Edited by two distinguished experts in the field, this evidence-based guide, divided into 19 chapters and written clearly, offers a comprehensive overview of AI in oral health for researchers, clinicians, academics, students, and other professionals in dentistry and related fields.

Chapter 1 introduces AI systems and their importance in healthcare. Chapter 2 discusses machine learning, deep learning, and artificial neural networks (ANNs) as methods for analysing dental images, classifying dental disorders, and predicting treatment outcomes. Chapter 3 explores the history of AI, while Chapter 4 focuses on the use of ANNs in diagnosis and treatment planning within digital dentistry. One of the most interesting parts, Chapter 5, highlights the fascinating world of AI in action through AI in endodontics and restorative dentistry. This includes AI-powered diagnosis of pulpal and periapical pathosis, vertical root fracture, and tooth decay, as well as working length determination and case difficulty prediction. The design optimisation of dental and orthopaedic implants is covered in the next chapter. Chapter 7, a must-read for clinicians, explores how AI streamlines oral surgery and periodontics, offering automated, objective diagnosis and treatment planning, and improved outcomes.

Chapters 8 and 9 discuss AI applications in orthodontics and oral medicine, covering current uses and future possibilities. Chapters 10 and 11 address prevalent disorders, obstructive sleep apnoea and temporomandibular joint disease. Chapter 12 covers another hot topic, 3D printing and bioprinting with the help of AI. The next two chapters explore AI applications in dental education and dental health. Chapter 15 focuses on AI applications in COVID-19. Another noteworthy chapter is Chapter 16, dealing with the ethical framework of AI applications in dentistry from a medico-legal perspective. The following two chapters cover the application of deep learning in image processing and the final chapter discusses the future direction of AI in dentistry.

In summary, this book explores the applications of AI in various dental fields. It definitely serves as a valuable resource for those seeking to stay ahead of the curve in innovation and be ready for the future of dentistry.

Mojtaba Mehrabian

