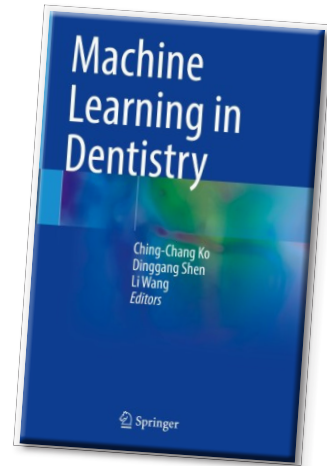


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Machine Learning in Dentistry

Editors: Ching-Chang Ko, Dinggang Shen, Li Wang
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Professor Ching-Chang Ko, DDS, MS, PhD, Vig / William Endowed Chair of the Division of Orthodontics, College of Dentistry at Ohio State University, Columbus, OH, USA, Professor Dinggang Shen, PhD, FIEEE, FAIMBE, FIAPR, Dean of School of Biomedical Engineering at ShanghaiTech University, Shanghai, China, and Assistant Professor Li Wang, BS, PhD, Department of Radiology and Biomedical Research Imaging Center at the University of North Carolina at Chapel Hill, Chapel Hill, NC, USA offer a new book in the field of artificial intelligence (AI) which is an update in contemporary dentistry on aspects related to Machine Learning in Dentistry (MLD), clearly explaining dental imaging, oral diagnosis and treatment, dental models and dental research.

Today in dentistry, digital technologies such as conical beam computed tomography (CBCT), intraoral 3D scanning, 3D printing and personalized treatment planning play an important role in both research and practice.

The book entitled **Machine Learning in Dentistry** is divided in four parts, being written by a series of invited experts who fill the fourteen chapters.

The five chapters in the first part, *Machine Learning for Dental Imaging*, present one by one, CBCT segmentation of craniomaxillofacial bony structures, craniomaxillofacial landmark digitization of 3D imaging, segmenting bones from brain MRI via generative adversarial learning, sparse dictionary learning for 3D craniomaxillofacial skeleton estimation based on 2D face photographs and facial recognition in orthodontics.

The four chapters in the second part, *Machine Learning for Oral Diagnosis and Treatment Planning*, in four chapters, inform the reader on performing orthodontic diagnoses and treatment planning, on a new approach to the extraction decision in orthodontics, characterization of craniofacial variations and on patient-specific reference model for planning orthognathic surgery.

The two chapters in third part, *Machine Learning and Dental Designs*, are a detailed presentation of aspects regarding orthodontic CAD / CAM technologies and assessment of outcomes by using machine learning.

The three chapters in the last part, *Machine Learning Supporting Dental Research*, bring clarifications on evidence synthesis research, genetics and genomics and finite element modeling.

The book **Machine Learning in Dentistry** is a valuable guide for practitioners and researchers in the field of dentistry who want to benefit from the contribution of using machine learning techniques in their daily work. With the help of digital technologies, the treatment is more predictable, objective and effective, reducing iatrogenic complications.

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The Books Review is drafted in the reviewer's sole wording and illustrates his opinions