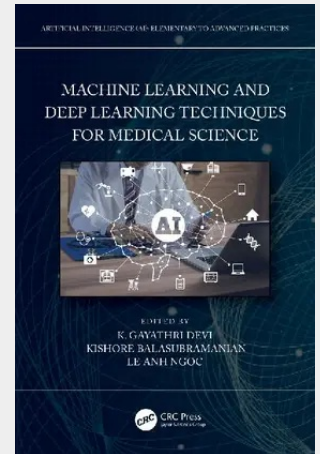


Machine Learning and Deep Learning Techniques for Medical Science

The application of machine learning is growing exponentially into every branch of business and science, including medical science. This book presents the integration of machine learning (ML) and deep learning (DL) algorithms that can be applied in the healthcare sector to reduce the time required by doctors, radiologists, and other medical professionals for analyzing, predicting, and diagnosing the conditions with accurate results. The book offers important key aspects in the development and implementation of ML and DL approaches toward developing prediction tools and models and improving medical diagnosis. The contributors explore the recent trends, innovations, challenges, and solutions, as well as case studies of the applications of ML and DL in intelligent system-based disease diagnosis. The chapters also highlight the basics and the need for applying mathematical aspects with reference to the development of new medical models. Authors also explore ML and DL in relation to artificial intelligence (AI) prediction tools, the discovery of drugs, neuroscience, diagnosis in multiple imaging modalities, and pattern recognition approaches to functional magnetic resonance imaging images. This book is for students and researchers of computer science and engineering, electronics and communication engineering, and information technology; for biomedical engineering researchers, academicians, and educators; and for students and professionals in other areas of the healthcare sector. - Presents key aspects in the development and the implementation of ML and DL approaches toward developing prediction tools, models, and improving medical diagnosis - Discusses the recent trends, innovations, challenges, solutions, and applications of intelligent system-based disease diagnosis - Examines DL theories, models, and tools to enhance health information systems - Explores ML and DL in relation to AI prediction tools, discovery of drugs, neuroscience, and diagnosis in multiple imaging modalities Dr. K. Gayathri Devi is a Professor at the Department of Electronics and Communication Engineering, Dr. N.G.P Institute of Technology, Tamil Nadu, India. Dr. Kishore Balasubramanian is an Assistant Professor (Senior Scale) at the Department of EEE at Dr. Mahalingam College of Engineering & Technology, Tamil Nadu, India. Dr. Le Anh Ngoc is a Director of Swinburne Innovation Space and Professor in Swinburne University of Technology (Vietnam).

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