

Preface

Artificial Intelligence (AI) and smart technologies are revolutionizing modern healthcare by enabling faster, more accurate, and more accessible approaches to disease detection, diagnosis, monitoring, and treatment. With the growing availability of medical data from electronic health records, medical imaging systems, wearable devices, biosensors, and genomic studies, intelligent algorithms can identify hidden patterns and support healthcare professionals in making informed clinical decisions. Early detection of diseases plays a crucial role in improving patient outcomes, reducing treatment costs, and increasing survival rates, making AI-powered diagnostic tools and smart healthcare systems increasingly valuable. Technologies such as machine learning, deep learning, the Internet of Medical Things (IoMT), telemedicine, and remote monitoring platforms are transforming traditional healthcare practices into proactive and personalized care models. This book, *AI and Smart Technologies for Early Detection and Treatment of Human Diseases*, presents recent advancements, applications, challenges, and future directions of intelligent healthcare technologies, highlighting their role in enhancing diagnostic accuracy, treatment effectiveness, patient monitoring, and healthcare accessibility. It serves as a comprehensive resource for researchers, academicians, healthcare professionals, and students interested in understanding how the convergence of AI and smart technologies is shaping the future of disease prevention, early diagnosis, and precision medicine for improved global healthcare outcomes.