

1.	Record Nr.	UNINA990003353740403321
	Autore	Burwitz-Melzer, Von Eva-Marie
	Titolo	EINBLICKE,Lehrer-Begleitbuch+Dialogbuch EIN DEUTSCHER SPRACHKURS HANDBUCH FUR DEN UNTERRICHT + 2 cassette video
	Pubbl/distr/stampa	MUNCHEN : GOETHE-INSTITUT, 1999
	Disciplina	431
	Locazione	DECLI
	Collocazione	431 BUR 431 BUR /1 431 BUR /2 431 BUR /3
	Lingua di pubblicazione	Italiano
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
2.	Record Nr.	UNINA9911009379903321
	Autore	Bajaj Varun
	Titolo	Internet of Things in Biomedical Sciences : Challenges and Applications
	Pubbl/distr/stampa	Bristol : , : Institute of Physics Publishing, , 2023 ©2023
	ISBN	9780750353137 0750353139
	Edizione	[1st ed.]
	Descrizione fisica	1 online resource (321 pages)
	Collana	IPEM-IOP Series in Physics and Engineering in Medicine and Biology Series
	Altri autori (Persone)	AnsariIrrshad Ahmad
	Soggetti	Internet of things Biomedical engineering
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia

Intro -- Preface -- Acknowledgements -- Editors& -- #x02019 -- biographies -- Varun Bajaj -- Irshad Ahmad Ansari -- List of contributors -- Contributors& -- #x02019 -- biographies -- Outline placeholder -- Ifti Akib Abir -- Mosabber Uddin Ahmed -- Mohammad Arif -- Kushagra Asthana -- Mohan Bansal -- Nitesh Singh Bhati -- Sama Bolog -- Arjun Chaudhary -- Pushpa Choudhary -- Adiba Tabassum Chowdhury -- Ajay Dagar -- Ngoc Tung Dang -- Roopa Golchha -- René Iván González-Fernández -- Kapil Gupta -- José Luis Hernández-Cáceres -- Ruby Jain -- Daniel Jesus Jimenez-Gonzalez -- Apoorv Joshi -- Samyak Kothari -- Alejandro Manuel López Reyes -- Bhounik Mahajan -- Anto Manuel -- Gisela Montes de Oca Colina -- Abu Jaffor Morshedul Abedin -- Margarita Lucia Mulet-Cartaya -- Cuong Nguyen -- Thi Thu Hoai Nguyen -- Anand Bhushan Pandey -- Nikhil Kumar Parida -- Antonio Miguel Pesqueira -- Bidan Pramanick -- Mehedi Hasan Raju -- Mridu Sahu -- Hiba Shakeel -- Palanivel Rajan Selvakumaran -- Miss Hiral Rajivkumar Shah -- Jash Shah -- Manan Shah -- Manish Sharma -- Priya Sharma -- Rajeev Sharma -- Arun Kumar Singh -- Uday Pratap Singh -- Abirami Tamilarasu -- Ashish Tripathi -- Chapter 1 IoT-based continuous cardiac monitoring system -- 1.1 Introduction -- 1.2 Related works -- 1.3 Proposed IoT-based system -- 1.3.1 ECG and its medical significance -- 1.3.2 ECG electrodes -- 1.3.3 AD8232 ECG acquisition board -- 1.3.4 Arduino UNO module -- 1.3.5 HC-05 Bluetooth module -- 1.3.6 Android mobile -- 1.4 Prototype implementation -- 1.5 Conclusion -- References -- Chapter 2 IoT architectures for biomedical devices -- 2.1 Introduction -- 2.2 IoT in biomedical devices and applications -- 2.3 Approaches to IoT-based applications -- 2.3.1 Sensor-based approach -- 2.3.2 Computer vision-based approach -- 2.3.3 Security-based approach -- 2.3.4 Communication-based approach. 2.4 Implementation of IoT in healthcare and biomedical devices -- 2.5 Implementation of cloud-based and fog-based technology in healthcare and biomedical devices -- 2.5.1 Cloud-based technology -- 2.5.2 Fog-based technology -- 2.6 Discussion and future direction -- 2.7 Conclusion -- References -- Chapter 3 AI role in making IoT-based medical devices a success -- 3.1 Introduction -- 3.2 Benefits of an IoT network -- 3.2.1 Sensing elements for medical purpose -- 3.3 Machine learning -- 3.3.1 Supervised learning -- 3.3.2 Unsupervised learning -- 3.3.3 Reinforcement learning -- 3.4 Machine learning and IoT -- 3.4.1 H-IoT architecture -- 3.4.2 H-IoT algorithms -- 3.5 Artificial intelligence -- 3.5.1 The various types of AI -- 3.5.2 AI and IoT -- 3.5.3 Remote patient monitoring (RPM) -- 3.5.4 Diabetes disease -- 3.5.5 Cardiovascular disease (CVD) -- 3.5.6 Wearable device using IoT -- 3.6 Real-time applications of health monitoring devices -- 3.7 Conclusion -- References -- Chapter 4 IoT-enabled biosensors for cancer and disease detection -- 4.1 Introduction -- 4.2 Lung cancer and its detections -- 4.2.1 Lung cancer -- 4.2.2 LC symptoms -- 4.2.3 Treatment options -- 4.2.4 Factors determining LC stage -- 4.3 Detection methods and their disadvantages in LC -- 4.3.1 Early detection methods of LC -- 4.3.2 Disadvantages of the traditional methods over breath biopsy -- 4.4 Biomarkers -- 4.4.1 What are biomarkers? -- 4.4.2 VOCs as biomarkers -- 4.4.3 Choice of appropriate VOCs as biomarkers -- 4.4.4 Potential of VOCs in disease detection -- 4.4.5 Acetone (C₃H₆O) as biomarker -- 4.5 IoT-enabled biosensor -- 4.6 Typical block diagram -- 4.6.1 Sampling-breath sample collection method -- 4.6.2 Measurement-a sensor for acetone detection -- 4.6.3 Signal processing circuit and signal transmission unit -- 4.6.4 Data analysis -- 4.7 Conclusions -- Acknowledgments.

References -- Chapter 5 A comprehensive study on IOT applications in wearable healthcare devices -- List of abbreviations -- 5.1 Introduction -- 5.2 Classification of wearable medical devices -- 5.2.1 Glucose trackers -- 5.2.2 Blood sensors -- 5.2.3 Asthma monitoring -- 5.2.4 Smart contact lenses -- 5.3 Wearable biosensors -- 5.4 Blood pressure monitoring -- 5.5 Wearable fitness trackers -- 5.6 Smart jewellery -- 5.7 ECG monitoring system -- 5.8 Conclusion -- References -- Chapter 6 Integration of IoT and chatbot for spreading awareness on cancer using Engati -- 6.1 Introduction -- 6.1.1 Chatbot in IoT -- 6.1.2 Advantages of AI-chatbot -- 6.2 Literature survey -- 6.2.1 Motivation -- 6.2.2 Industries benefitting from chatbots -- 6.3 Methodology -- 6.3.1 Core components of a chatbot -- 6.3.2 Basic model of chatbot -- 6.3.3 Integrating with APIs -- 6.3.4 Chatbot maturity process -- 6.3.5 Chatbot flow in Engati -- 6.4 Case study -- 6.4.1 COVIDAsha -- 6.4.2 Hospido -- 6.5 Results and discussion -- 6.6 Conclusion and future work -- References -- Chapter 7 IoT solutions for fighting antimicrobial resistance -- 7.1 Internet of Things (IoT), history and evolution -- 7.2 Internet of Medical Things (IoMT), its importance and potential in healthcare -- 7.3 IoT and IoMT in fighting antimicrobial resistance -- 7.3.1 AMR, a global threat -- 7.3.2 Challenges in fighting against AMR -- 7.3.3 Applications of IoT, IoMT in controlling AMR -- 7.4 Concluding remarks -- References -- Chapter 8 IoT-based heart valve disorder detection using an amplitude and frequency modulated signal model -- 8.1 Introduction -- 8.2 Proposed methodology -- 8.2.1 AFM signal model -- 8.2.2 Feature extraction -- 8.2.3 Classification techniques -- 8.3 Performance measures -- 8.3.1 Database -- 8.3.2 Confusion matrix -- 8.4 Results and discussion -- 8.4.1 Binary classification. -- 8.4.2 Multiclass classification -- 8.4.3 Comparison of the results with existing methods -- 8.5 Conclusion -- References -- Chapter 9 Role of Internet of Things, artificial intelligence, and machine learning in biomedical devices: a comprehensive review -- 9.1 Introduction -- 9.2 Data workflow in IoT, ML, and AI for biomedical applications -- 9.3 Robotic surgeries and telemedicine -- 9.3.1 Brief history -- 9.3.2 Remote patient monitoring and treatment -- 9.3.3 Internet of Robotic Things (IoRT) -- 9.4 Sensors and wearable devices -- 9.4.1 Biosensors -- 9.4.2 Wearable sensors -- 9.4.3 IoT-based communication technology for wearable devices -- 9.5 Diagnostic technologies -- 9.5.1 Parkinson's disease diagnosis -- 9.5.2 Acquired immunodeficiency disease (AIDS) -- 9.5.3 Diabetic retinopathy -- 9.6 Conclusion -- References -- Chapter 10 Internet of Medical Things-based wearable medical devices -- 10.1 Introduction -- 10.2 Smart wearables -- 10.3 Architectural aspects -- 10.4 Some applications of smart wearables -- 10.4.1 Electrocardiogram (ECG) monitoring -- 10.4.2 Oxygen saturation monitoring -- 10.4.3 Temperature monitoring -- 10.4.4 Blood pressure monitoring -- 10.4.5 Sports and fitness tracking -- 10.5 Challenge and future scope -- 10.5.1 Power consumption -- 10.5.2 Security and data privacy -- 10.5.3 Conduction by sweat -- 10.5.4 Wearability -- 10.5.5 Environmental impact -- 10.5.6 Conclusion -- References -- Chapter 11 Low-cost solutions for cardiac care services based on IoT capabilities -- 11.1 Introduction -- 11.2 Internet of Medical Things -- 11.3 Case 1: a cardiac event recorder derived from a Holter system -- 11.3.1 First approach to the cardiac event recorder -- 11.3.2 Cardiac event recorder based on IoMT -- 11.4 Case 2: following-up cardiac arrhythmias -- 11.4.1 How to solve the described weakness? -- 11.4.2 Overall system functioning. -- 11.5 Results and discussion -- 11.6 ECG processing -- 11.7 Case 4: assistant device for the elderly -- 11.8 Data security -- 11.9

Conclusions -- Acknowledgments -- Conflict of interest -- References -- Chapter 12 Patient empowerment with direct insights from healthcare professionals questionnaires -- 12.1 Introduction -- 12.2 Literature review -- 12.2.1 Real-world data (RWD), electronic medical records (EMRs), electronic health records (EHRs), and health data -- 12.2.2 Prediction data models based on artificial intelligence -- 12.2.3 Data privacy law, data regulations, data security -- 12.2.4 Health data future challenges, research analysis barriers -- 12.3 Empirical methodological approach -- 12.3.1 Questionnaire design and variable selection -- 12.3.2 Results and statistical analysis -- 12.4 Conclusions -- References -- Chapter 13 Internet of Things in biomedical system: significance, applications, and challenges -- 13.1 Introduction -- 13.2 Evolution of IoT in healthcare -- 13.3 Literature survey on IoT and biomedical systems -- 13.4 Significance of IoT for different stakeholders -- 13.4.1 Hospitals -- 13.4.2 Patients -- 13.4.3 Doctors/physicians -- 13.4.4 Insurance companies in the health sector -- 13.5 Architecture and role of IoT in healthcare -- 13.5.1 Three-layered IoT architecture -- 13.5.2 Five-layered IoT architecture -- 13.6 Role of IoT: a healthcare analytics -- 13.6.1 Benefits of Internet of Things -- 13.6.2 Applications of IoT devices in healthcare -- 13.7 IoT in health and healthcare system -- 13.7.1 IoT companies/systems in public health -- 13.7.2 IoT companies/systems for chronic disease management -- 13.7.3 IoT companies/systems for smart sleep -- 13.7.4 IoT companies/systems for medication refills -- 13.7.5 IoT companies/systems to streamline hospice care -- 13.7.6 IoT companies/systems for remote care and monitoring. 13.8 Challenges to IoT in healthcare.

Sommario/riassunto

Discussion of various IOT based systems for classification and design strategy of biomedical systems are provided in the book. This book can serve as a pillar for the IOT application in biomedical systems understanding.
