1. Record Nr. UNISA996394643603316

| | |
|---|---|
| Autore | Godfridus |
| Titolo | The knowledge of things unknown [[electronic resource] ] : shewing the effects of the planets and other astronomical constellations : with the strange events that befal men, women and children born under them / / compiled by Godfridus ; together with The husbandman's practice, or, Prognostication for ever, as teacheth Albert, Alkind and Ptolomie ; with The shepherd's prognostication for the weather, and Pythagoras his wheel of fortune |
| Pubbl/distr/stampa | [London], : Printed by W.T. and are sold J. Ho[se], 167[6] |
| Descrizione fisica | [5], 172, [12] p., [1] leaf of plates : ill |
| Altri autori (Persone) | Malampus <3rd cent. B.C.> |
| Soggetti | Astrology<br>Almanacs, English |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | Woodcut frontispiece.<br>Place of publication and bracketed characters in publication statement suggested by Wing.<br>Imperfect: pages cropped, stained and tightly bound with some loss of print.<br>Reproduction of the original in the British Library. |
| Nota di contenuto | The book of knowledge -- The husband-man's practice, or, Prognostication for ever / as teacheth, Albert, Alkind, Haly, and Ptolomy ; with The Shepherds perpetual prognostication for the weather. [London] : Printed for W.T. and are to be sold by J. Hose, 1676 (p. 77-136)--The shepherd's prognostication for the weather : with a brief chronology of divers memorable things since these hundred years, shewing in what year they happened and how long it is since to this year 1671 : with a brief colletion of all the members of man physiognomiz'd : and a judgment upon this significancation of moles on man or woman, from the head to foot / by Melampus, a Greek author ; also the wheel of fortune approved and confirmed by science and reason of Pythagoras, the most excellent philosopher, by which you may know all things that you will demand. [London] : Printed for W. |

| | | |
|---|---|---|
| | | T. and are to be sold by J. Hose, 1676 (p. [136]-172) -- Fairs : the names of the principal fairs in England and Wales. |
| | Sommario/riassunto | eebo-0018 |

| | | |
|---|---|---|
| 2. | Record Nr. | UNINA9911048016903321 |
| | Autore | Sountharrajan S |
| | Titolo | Applied Mathematical Modeling for Biomedical Robotics and Wearable Devices |
| | Pubbl/distr/stampa | Chantilly : , : Elsevier Science & Technology, , 2025<br>©2025 |
| | ISBN | 0-443-33515-X<br>0-443-33514-1 |
| | Edizione | [1st ed.] |
| | Descrizione fisica | 1 online resource (301 pages) |
| | Collana | Medical Robots and Devices: New Developments and Advances Series |
| | Altri autori (Persone) | KarthigaM<br>BalasamyBalamurugan<br>BashirAli Kashif |
| | Disciplina | 610.28 |
| | Lingua di pubblicazione | Inglese |
| | Formato | Materiale a stampa |
| | Livello bibliografico | Monografia |
| | Nota di contenuto | Front Cover -- Applied Mathematical Modeling for Biomedical Robotics and Wearable Devices -- Copyright Page -- Contents -- List of contributors -- About the editors -- Preface -- 1 Introduction to biomedical robotics and wearable devices in healthcare -- Introduction -- Literature survey -- Wearable devices in healthcare -- Medical robotics -- Flexible and wearable sensors -- Technology milestones of wearable triboelectric nanogenerators -- Implantable medical devices -- Reinforced life quality with flexible sensors and robotic exoskeletons -- Wearable devices for health monitoring -- Smartphone solutions for health monitoring -- Novel coronavirus (COVID-19) -- Heart disease -- Diabetes -- Smart homes -- Biomedical robotics -- Artificial intelligence for the Cyber-Physical Systems based Homecare Robotic System -- Flexible sensing for the Cyber-Physical Systems based Homecare Robotic System -- Artificial intelligence and Homecare |

Robotic Systems -- Limb robotic assistance: an example perspective -- Wearable robots for upper-limb assistance -- Wearable personal health monitoring -- Wearable personal health monitoring systems -- Computing architecture for Internet of Medical Things -- Cloud-based computing -- The rise of edge computing -- Cloud-edge artificial intelligence architecture for Internet of Medical Things -- Combining wearable Internet of Medical Things devices with 6G networks -- Optimizations of artificial intelligence techniques -- Summary -- References -- 2 Mathematical modeling in healthcare engineering -- Introduction -- Overview of mathematical models in medicine -- Introduction to mathematical modeling techniques -- Methodology -- Search strategy and criteria for selection -- Analysis and results of mathematical modeling research -- Quantitative data analysis -- Guidelines and recommendations summary -- Utilization of modeling. Fundamental principles and techniques of mathematical modeling -- Mathematical modeling: definition and classification -- Typical mathematical models and methods of mathematical modeling -- Utilization of mathematical models in medical sciences -- Computational models based on differential equations in biomedicine -- Models of growth and development -- Gompertz model -- The Bertalanffy model -- Models of tumor growth -- Models of the cardiovascular system -- Statistical frameworks for medical research -- Parametric survival analysis model -- Model for assessing risk -- Machine learning-based models for healthcare -- Analytical model for medical images -- Pathology analytical model -- Data collection and processing -- Extracting and selecting features -- Model training and evaluation -- Medical models based on network science -- Conclusion and summary -- Issues and challenges -- Future applications -- References -- 3 Mathematical foundations and computational techniques for robotic motion: a unified approach -- Linear algebra and calculus for robotic motion -- The mathematics of robotics -- Integration with computational tools -- MATLAB and linear algebra -- Python and calculus -- Probability theory and statistics -- Linear algebra in robotics -- Calculus in robotics -- Linear algebra and optimization in robotics -- Optimization utilizing MATLAB and Python -- Linear algebra -- Optimization -- Mathematical modeling of robotic locomotion systems -- Challenges in the modeling of symmetric locomotion systems -- The function of symmetry and geometric mechanics -- Progress in geometric mechanics for locomotion -- Applications and prospective trajectories -- Configuration space and the notion of manifolds -- Definition of a manifold -- Illustration of manifolds -- Essential configuration blocks and operations in configuration pace.
Lie groups and their significance in configuration space -- Utilization of Lie groups in configuration space -- Special Euclidean group [SE(2)] -- Definition and characteristics of SE(2) -- Utilization of SE(2) in robotics -- Motion planning -- Regulatory algorithms -- Robot localization -- Mathematical representation of SE(2) -- Local group velocities in SE(2) -- Function, curves, and trajectories on the manifold -- Functions on manifolds -- Curves on manifolds -- Utilizations of curves -- Vectors on manifolds -- Utilizations of vectors -- Velocity of mechanical equipment and curved spaces -- Characterization of velocities in mechanical machines -- Tangential spaces -- Visualizing tangential spaces -- Utilization of tangential spaces in robotics -- Motion planning -- Regulatory approaches -- Analysis of stability -- Local group velocities and tangential spaces -- Elevated actions with vectors in the tangential manifold -- Definition of elevated actions -- Mathematical formulation of elevated actions -- Utilization of lifted

events in robotics -- Motion regulation -- Kinematic modeling -- Analysis of stability -- Velocities of a rigid body -- Definition of rigid body velocities -- Kinematics of rigid parts -- Dynamics of rigid objects -- Left and right elevated actions -- Characterization of left and right elevated actions -- Mathematical depiction of elevated actions -- Utilization of left- and right-lifted actions -- Motion regulation -- Kinematic modeling -- Analysis of stability -- Spatial velocity and its calculation utilizing adjoint operators -- Formulation of spatial velocity -- Computation of spatial velocity -- Adjoint functions and spatial velocity -- Adjoint representation -- Utilization of spatial velocity in robotics -- Motion planning -- Regulatory systems -- Analysis of stability -- Case studies.
Motion planning for serpentine robots -- Mathematical concepts -- Generalized Voronoi Graph (Henning et al., 1998) -- Follow-the-leader approach -- Optimization techniques -- Computational efficiency -- Collision detection and avoidance -- Two-wheeled robots -- Inverted pendulum hypothesis (Gadekar et al., 2024) -- Mathematical concepts -- System dynamics and control -- State-space representation -- Proportional-integral-derivative control -- Sensor fusion -- Torque generation -- Linear and angular velocity control -- Legged robots -- Importance of legged robots -- Mathematical concepts -- System dynamics and control -- State-space representation -- Optimization techniques -- Sensor fusion and estimation -- Dynamic balancing -- Future directions -- Conclusion -- References -- 4 Advanced biosignal processing and emotion recognition through artificial intelligence -- Introduction -- Related works -- Methodology -- Electroencephalography -- Electrocardiography -- Signal acquisition and preprocessing -- Extraction of features -- Detection of arrhythmia -- Detection of ischemia and infarction -- Risk stratification and prognosis -- Telemonitoring and remote healthcare -- Electromyography -- Signal acquisition and preprocessing -- Analysis of muscle activity -- Evaluation of muscle fatigue -- Analysis of movement -- Prosthetic regulation and human-computer interaction -- Rehabilitation and assessment of motor function -- Positron emission tomography -- Pulse oximetry -- Monitoring of blood pressure -- Glucose surveillance -- Magnetic resonance imaging -- Ultrasonography -- Infrared thermography -- Autonomous emotional computation (Soares et al., 2013) utilizing biosignal analysis and deep learning techniques -- Techniques for emotion recognition -- Multisignal emotion recognition systems -- Utilization of machine learning in emotion recognition.
Execution of the automated emotion recognition model -- Individuals involved -- Data set of emotional stimuli -- Protocol -- Acquisition and processing of physiological signals -- Cardiac characteristics: heart rate variability and blood volume pulse -- Measurement of blood volume pulse via photoplethysmography -- Characteristics of respiration -- Characteristics of thermal infrared imaging -- Classification algorithms -- Machine learning-Random ForestAalgorithm -- Deep learning-convolutional neural network and long- and short-term memory -- Results and discussion -- Analysis of the confusion matrix of Random Forest utilising heart rate variability and blood volume pulse -- Random Forest confusion matrix utilizing heart rate variability, blood volume pulse, and respiration -- Random Forest confusion matrix utilizing heart rate variability, blood volume pulse, respiration, and infrared -- Statistical significance -- Evaluation of the convolutional neural network-long- and short-term memorylstm model's performance -- Conclusion -- References -- 5 Optimization algorithms for design and control -- Introduction -- Utilization of

| | |
|---|---|
| | advanced technologies for optimal design and control in wearable robots -- Integration of many sensory modalities to improve motor function -- Enhancing fusion techniques for wearable robotics -- Human-in-the-loop control: optimization algorithms for efficient design and control of wearable robots -- Control mechanisms and challenges of human-in-the-loop -- Optimization algorithms used in human-in-the-loop control -- Sensory reconstruction and flexible electronics in wearable robots: optimizing neuromuscular interfaces -- Flexible electronics for enhanced neuromuscular interfaces -- Biomechatronic chips: enabling efficient signal processing -- Soft robot design and control optimization algorithms -- Architectural design. Design objective (robotic behavior). |
| Sommario/riassunto | Applied Mathematical Modelling for Biomedical Robotics and Wearable Devices offers readers a comprehensive and practical exploration of the integration of mathematical modelling in biomedical engineering. |