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Autore	Pollard A. Mark
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Pubbl/distr/stampa	Cambridge, : Royal Society of Chemistry, 1996
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Altri autori (Persone)	HeronCarl
Disciplina	930.10285
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Sommario/riassunto	The application of chemistry within archaeology is an important and fascinating area. It allows the archaeologist to answer such questions as "what is this artefact made of?", "where did it come from?" and "how has it been changed through burial in the ground?", providing pointers to the earliest history of mankind. Archaeological Chemistry begins with a brief description of the goals and history of archaeological science, and the place of chemistry within it. It sets out the most widely used analytical techniques in archaeology and compares them in the light of relevant applications. Th

2. Record Nr.	UNINA9911069651903321
Autore	Khan Tahmeena
Titolo	Artificial Intelligence : a Multidisciplinary Approach Towards Teaching and Learning
Pubbl/distr/stampa	Sharjah : , : Bentham Science Publishers, , 2024 ©2024
ISBN	9789815305180 9815305182
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Descrizione fisica	1 online resource (0 pages)
Altri autori (Persone)	SinghManisha RazaSaman
Soggetti	EDUCATION / Teaching / Methods & Strategies
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Cover -- Title -- Copyright -- End User License Agreement -- Contents -- Foreword I -- Foreword II -- Preface -- List of Contributors -- The Evolution of Artificial Intelligence from Philosophy to New Frontier -- Manisha Singh1,* , Arbind K. Jha2, Tahmeena Khan3 and Saman Raza4 -- INTRODUCTION -- THE HISTORY OF ARTIFICIAL INTELLIGENCE (AI) -- PHILOSOPHY AND AI: A PHILOSOPHICAL JOURNEY -- PHILOSOPHICAL CONSIDERATION OF AI -- Metaphysics and AI -- Epistemology and AI -- Axiology and AI -- Framework of AI -- HUMAN-MACHINE TEAMING FRAMEWORK -- FORMS OF AI -- Based on Capabilities -- Artificial Narrow Intelligence -- Artificial General Intelligence -- Artificial Super Intelligence -- Generative AI -- Based on Functionality Artificial Intelligence -- Reactive Machines -- Limited AI -- Theory of Mind AI -- Self-aware AI -- Some other forms of AI -- AI AND NEW FRONTIERS -- AI and Medical Science -- AI and Life Science -- AI and Mathematics -- AI and Architecture -- AI and Environmental Science -- AI in Education -- AI in Research -- ChatGPT/Perplexity/GoogleBard -- PDFgear -- Wordvice AI -- Consensus -- Trinka -- QuillBot AI -- Page.AI -- Zotero, EndNote Online, Mendeley, RefWorks, etc -- AI, HUMAN INTELLIGENCE AND HUMAN WISDOM -- CONCLUDING REMARKS -- REFERENCES -- Artificial Intelligence and Bioinformatics: A Powerful Synergy for Drug Design

and Discovery -- Chanda Hemantha Manikumar Chakravarthi¹, Viswajit Mulpuru¹ and Nidhi Mishra^{2,*} -- INTRODUCTION -- Overview of Machine Learning -- Supervised Learning -- Unsupervised Learning -- Reinforcement Learning -- Importance of Drug Design -- Challenges in Traditional Drug Discovery -- DATA ANALYSIS AND PREPROCESSING -- Utilizing Biological Databases -- Omics Data Integration -- Data Cleaning and Feature Extraction -- Data Cleaning and Pre-processing -- Feature Extraction Techniques.

Handling Imbalanced Datasets -- Oversampling and Undersampling -- Advanced Algorithms for Imbalanced Data -- Addressing Batch Effects -- Definition of Batch Effects -- Ensuring Consistency -- PREDICTIVE MODELLING -- Classification Algorithms -- Support Vector Machines (SVM) -- Random Forests -- Neural Networks -- Regression Analysis -- Quantitative Structure-Activity Relationship (QSAR) -- Predicting Molecular Properties -- VIRTUAL SCREENING -- Target Identification and Validation -- Omics Data Integration -- Disease Gene Prediction -- Expression Profiling and Differential Analysis -- Pharmacogenomics -- Text Mining and Literature Analysis -- Validation through High-Throughput Screening (HTS) -- Integration of Structural Biology Data -- Ligand-Based Virtual Screening Techniques -- Molecular Descriptors and Fingerprints -- Quantitative Structure-Activity Relationship (QSAR) -- Machine Learning Classifiers -- Pharmacophore Modeling -- Chemical Similarity Networks -- Ensemble Methods -- Structure-Based Virtual Screening -- Protein-Ligand Docking -- Scoring Functions -- Deep Learning in Binding Affinity Prediction -- Machine Learning Filters -- Consensus Scoring -- Machine Learning for Binding Site Prediction -- Fragment-Based Virtual Screening -- DE NOVO DRUG DESIGN -- Generative Models in Drug Design -- Generative AI in bioinformatics -- Generative AI in Drug Design -- Generative AI revolutionizes Drug Discovery Processes -- Variational Autoencoders (VAEs) -- Generative Adversarial Networks (GANs) -- Recurrent Neural Networks (RNNs) and Long Short-Term Memory (LSTM) Networks -- Transformer-Based Models -- Graph Generative Models -- Conditional Generative Models -- Transfer Learning in Generative Models -- Reinforcement Learning for Molecule Generation -- Objective Function Definition -- Policy Networks -- Action Space Representation.

Monte Carlo Tree Search (MCTS) -- Actor-Critic Models -- Exploration Strategies -- Transfer Learning and Pre-training -- DRUG REPURPOSING -- Identifying New Indications for Existing Drugs -- Biological Data Integration -- Drug Similarity and Similarity Networks -- Disease Similarity and Phenotype Matching -- Text Mining and Literature Analysis -- Predictive Modeling for Drug-Disease Associations -- Network Propagation Algorithms -- Electronic Health Records (EHR) Analysis -- Multi-Omics Data Integration -- Utilizing Machine Learning for Drug Repositioning -- Data Integration and Representation -- Feature Extraction and Engineering -- Predictive Modelling for Drug-Disease Associations -- Network-Based Approaches -- Deep Learning Models -- Text Mining and Literature Analysis -- Clinical Data Mining -- Ensemble Learning -- PHARMACOPHORE MODELLING -- Molecular Interaction Understanding -- Drug Design and Optimization -- Virtual Screening -- Lead Identification and Optimization -- Polypharmacology Analysis -- Structure-Activity Relationship (SAR) Analysis -- Fragment-Based Drug Design -- Target Druggability Assessment -- Pharmacokinetic and Toxicity Prediction -- Adverse Effects Mitigation -- Feature Selection and Descriptor Generation -- Training Data Generation -- Enhanced Pharmacophore Screening -- Predictive Pharmacophore Modeling -- Polypharmacology Prediction -- Druggability Assessment -- Hybrid

Approaches -- Pharmacophore Optimization -- Data-Driven Drug Design -- PERSONALIZED MEDICINE -- Tailoring Treatments Based on Individual Genetic Profiles -- Importance and Benefits -- Application of Machine Learning -- Examples of Personalized Medicine Applications -- Ethical and Regulatory Considerations -- Future Directions -- Machine Learning in Patient Stratification -- Key Components of Patient Stratification -- Importance and Benefits.

Applications of Machine Learning -- Examples of Patient Stratification -- Challenges and Considerations -- Future Directions -- CHALLENGES AND FUTURE DIRECTIONS -- Data Quality and Availability -- Data Quality Issues -- Data Standardization and Integration -- Limited Accessibility -- Small Sample Sizes -- Biological Variability -- Ethical Considerations -- Future Directions -- Advancements in Personalized Medicine -- Ethical and Regulatory Considerations -- Patient Privacy and Informed Consent -- Data Ownership and Sharing -- Bias and Fairness in Models -- Regulatory Compliance -- Inclusivity in Research -- Transparency in AI Decision-Making -- Future Directions -- Emerging Technologies and Trends in Drug Design -- Artificial Intelligence (AI) and Machine Learning -- Quantum Computing -- Structural Biology Advancements -- Immunotherapy and Personalized Medicine -- CRISPR and Gene Editing -- Nanotechnology in Drug Delivery -- Data Integration and Systems Biology -- 3D Printing in Drug Manufacturing -- Blockchain for Data Security -- CONCLUDING REMARKS -- Artificial Intelligence (AI) and Machine Learning -- Quantum Computing -- Immunoinformatics -- CRISPR-Cas9 and Gene Editing -- 3D Bioprinting -- Nanotechnology -- RNA Therapeutics -- Pharmacogenomics -- Virtual Reality (VR) and Augmented Reality (AR) -- Blockchain in Drug Development -- Metabolomics and Systems Biology -- Synthetic Biology -- Potential Impact on the Pharmaceutical Industry -- Acceleration of Drug Discovery -- Revolutionizing Vaccine Development -- Precision Medicine and Personalized Therapies -- Efficient Drug Testing and Development -- Targeted Drug Delivery and Formulation -- Innovations in RNA Therapeutics -- Optimizing Drug Responses -- Immersive Research Environments -- Ensuring Data Integrity and Compliance -- Comprehensive Understanding of Drug Impact.

Biosynthesis and Customized Biological Systems -- REFERENCES -- Artificial Intelligence Assisted Teaching and Learning and Research of Environmental Sciences -- Tahmeena Khan^{1,*}, Priya Mishra², Kulsum Hashmi², Saman Raza², Manisha Singh³, Seema Joshi² and Abdul Rahman Khan¹ -- INTRODUCTION -- Generative AI in Education -- AI In Teaching, Learning and Academic Achievement -- AI-Based Tools and Methodologies in Environmental/Geoscience Teaching -- Different AI Techniques Used in Environment and Geosciences-Based Research -- Hazard Identification -- Risk Assessment -- Risk Evaluation -- Decision Making -- Earthquakes -- Volcano -- Landslide -- Rainfall -- Cyclones -- Meteorological Drought -- Wildfire -- Dust storm -- Anthropogenic Air Pollutants -- AI in Biosphere -- Chat GP and Environmental Science -- CHALLENGES IN AI IN ENVIRONMENTAL SCIENCE BASED RESEARCH -- Choosing a Suitable Model -- Training Optimization -- Data Preparation -- Ethical Issues -- CONCLUDING REMARKS -- REFERENCES -- Integrating AI Approaches in Teaching-Learning Associated with the Mitigation of Air Pollution: A

Comprehensive Analysis -- Rahila Rahman Khan^{1,*}, Ahmad Faiz Minai² and Rushda Sharf¹ -- INTRODUCTION -- OVERVIEW OF THE CURRENT STATE OF AIR POLLUTION AND ITS IMPACT -- APPLICATIONS OF AI IN ENVIRONMENTAL CHALLENGES -- Environmental Monitoring -- Climate Modeling -- Biodiversity Conservation -- Renewable Energy --

POTENTIAL OF AI IN ADDRESSING AIR POLLUTION -- Data Analysis and Prediction -- Source Identification -- Early Warning Systems -- Policy Formulation -- PROBLEMS WITH CONVENTIONAL AIR QUALITY MONITORING TECHNIQUES -- Restricted Coverage -- Temporal Limitations -- High Installation and Maintenance Costs -- Data Timeliness -- AI-BASED AIR QUALITY MONITORING -- Remote Sensing and Satellite Technology -- Integration of Satellite Data. AI Algorithms for Data Analysis and Interpretation.

Sommario/riassunto

Artificial Intelligence: A Multidisciplinary Approach towards Teaching and Learning explores the evolving role of AI in education, covering applications in fields such as bioinformatics, environmental science, physics, chemistry, economics, and language learning. Written by experts, this book provides a comprehensive overview of AI's integration into diverse subjects, offering insights into the future of AI in education and its potential to enhance academic research and pedagogy. Targeted at faculty, students, and professionals, the book addresses AI's role in blended learning environments and offers practical tools for educators seeking to incorporate AI into their teaching practices. Key Features:- Multidisciplinary exploration of AI in teaching and learning.- Practical tools and methodologies for educators.- Insights into AI-driven innovations in research.- Relevant to a broad audience, from students to professionals. Readership: Undergraduate/Graduate students, academics, and professionals interested in AI applications in education.
