1. Record Nr. UNINA9911019769603321 Autore R Elakkiya Titolo Cognitive analytics and reinforcement learning: theories, techniques and applications / / edited by Elakkiya R. and Subramaniyaswamy V Hoboken, NJ:,: John Wiley & Sons, Inc. Pubbl/distr/stampa Beverly, MA:,: Scrivener Publishing LLC,, 2024 ©2024 **ISBN** 9781394214068 1394214065 9781394214051 1394214057 Edizione [1st ed.] Descrizione fisica 1 online resource Disciplina 006.3 Soggetti Soft computing Big data Lingua di pubblicazione Inglese **Formato** Materiale a stampa

Monografia

Nota di contenuto

Livello bibliografico

Cover -- Title Page -- Copyright Page -- Contents -- Preface -- Part I: Cognitive Analytics in Continual Learning -- Chapter 1 Cognitive Analytics in Continual Learning: A New Frontier in Machine Learning Research -- 1.1 Introduction -- 1.2 Evolution of Data Analytics -- 1.3 Conceptual View of Cognitive Systems -- 1.4 Elements of Cognitive Systems -- 1.5 Features, Scope, and Characteristics of Cognitive System -- 1.6 Cognitive System Design Principles -- 1.7 Backbone of Cognitive System Learning/Building Process -- 1.8 Cognitive Systems vs. AI -- 1.9 Use Cases -- 1.10 Conclusion -- References -- Chapter 2 Cognitive Computing System-Based Dynamic Decision Control for Smart City Using Reinforcement Learning Model -- 2.1 Introduction --2.2 Smart City Applications -- 2.3 Related Work -- 2.4 Proposed Cognitive Computing RL Model -- 2.5 Simulation Results -- 2.6 Conclusion -- References -- Chapter 3 Deep Recommender System for Optimizing Debt Collection Using Reinforcement Learning -- 3.1 Introduction -- 3.2 Terminologies in RL -- 3.3 Different Forms of RL --3.4 Related Works -- 3.5 Proposed Methodology -- 3.6 Result Analysis

of Reinforcement Learning -- Chapter 4 Predicting Optimal Moves in Chess Board Using Artificial Intelligence -- 4.1 Introduction -- 4.2 Literature Survey -- 4.3 Proposed System -- 4.3.1 Human vs. Human -- 4.3.2 Human vs. Alpha-Beta Pruning -- 4.3.3 Human vs. Hybrid Algorithm -- 4.4 Results and Discussion -- 4.4.1 ELO Rating -- 4.4.2 Comparative Analysis -- 4.5 Conclusion -- References -- Chapter 5 Virtual Makeup Try-On System Using Cognitive Learning -- 5.1 Introduction -- 5.2 Related Works -- 5.3 Proposed Method -- 5.4 Experimental Results and Analysis -- 5.5 Conclusion -- References. Chapter 6 Reinforcement Learning for Demand Forecasting and Customized Services -- 6.1 Introduction -- 6.2 RL Fundamentals -- 6.3 Demand Forecasting and Customized Services -- 6.4 eMart: Forecasting of a Real-World Scenario -- 6.5 Conclusion and Future Works -- References -- Chapter 7 COVID-19 Detection through CT Scan Image Analysis: A Transfer Learning Approach with Ensemble Technique -- 7.1 Introduction -- 7.2 Literature Survey -- 7.3 Methodology -- 7.4 Results and Discussion -- 7.5 Conclusion --References -- Chapter 8 Paddy Leaf Classification Using Computational Intelligence -- 8.1 Introduction -- 8.2 Literature Review -- 8.3 Methodology -- 8.4 Results and Discussion -- 8.5 Conclusion --References -- Chapter 9 An Artificial Intelligent Methodology to Classify Knee Joint Disorder Using Machine Learning and Image Processing Techniques -- 9.1 Introduction -- 9.2 Literature Survey --9.3 Proposed Methodology -- 9.4 Experimental Results -- 9.5 Conclusion -- References -- Part III: Advancements in Cognitive Computing: Practical Implementations -- Chapter 10 Fuzzy-Based Efficient Resource Allocation and Scheduling in a Computational Distributed Environment -- 10.1 Introduction -- 10.2 Proposed System -- 10.3 Experimental Results -- 10.4 Conclusion -- References --Chapter 11 A Lightweight CNN Architecture for Prediction of Plant Diseases -- 11.1 Introduction -- 11.2 Precision Agriculture -- 11.3 Related Work -- 11.4 Proposed Architecture for Prediction of Plant Diseases -- 11.5 Experimental Results and Discussion -- 11.6 Conclusion -- References -- Chapter 12 Investigation of Feature Fusioned Dictionary Learning Model for Accurate Brain Tumor Classification -- 12.1 Introduction -- 12.1.1 Importance of Accurate and Early Diagnosis and Treatment -- 12.1.2 Role of Machine Learning in Brain Tumor Classification. 12.1.3 Sparsity Issues in Brain Image Analysis -- 12.2 Literature Review -- 12.3 Proposed Feature Fusioned Dictionary Learning Model -- 12.4 Experimental Results and Discussion -- 12.5 Conclusion and Future Work -- References -- Chapter 13 Cognitive Analytics-Based Diagnostic Solutions in Healthcare Infrastructure -- 13.1 Introduction -- 13.2 Cognitive Computing in Action -- 13.2.1 Natural Language Processing (NLP) -- 13.2.2 Application of Cognitive Computing in Everyday Life -- 13.2.3 The Importance of Cognitive Computing in the Development of Smart Cities -- 13.2.4 The Importance of Cognitive Computing in the Healthcare Industry -- 13.3 Increasing the Capabilities of Smart Cities Using Cognitive Computing -- 13.3.1 Cognitive Data Analytics for Smarter Cities -- 13.3.2 Predictive Maintenance and Proactive Services -- 13.3.3 Personalized Urban Services -- 13.3.4 Cognitive Computing and the Role It Plays in Obtaining Energy Optimization -- 13.3.5 Data-Driven Decisions for City Development and Governance -- 13.4 Cognitive Solutions Revolutionizing the Healthcare Industry -- 13.4.1 Artificial Intelligence-Driven Diagnostics and the Detection of Disease -- 13.4.2 Individualized and Tailored Treatment Programs -- 13.4.3 Real-Time

-- 3.7 Conclusion -- References -- Part II: Computational Intelligence

Monitoring of Patients and Predictive Analytical Tools -- 13.4.3.1 Cognitively Assisted Robotic Surgery -- 13.4.4 Patient Empowerment with Health AI -- 13.5 Application of Cognitive Computing to Smart Healthcare in Seoul, South Korea (Case Study) -- 13.6 Conclusion and Future Work -- References -- Chapter 14 Automating ESG Score Rating with Reinforcement Learning for Responsible Investment -- 14.1 Introduction -- 14.2 Comparative Study -- 14.3 Literature Survey -- 14.4 Methods -- 14.5 Experimental Results -- 14.6 Discussion -- 14.7 Conclusion -- References.

Chapter 15 Reinforcement Learning in Healthcare: Applications and Challenges -- 15.1 Introduction -- 15.2 Structure of Reinforcement Learning -- 15.3 Applications -- 15.3.1 Treatment of Sepsis with Deep Reinforcement -- 15.3.2 Chemotherapy and Clinical Trial Dosing Regimen Selection -- 15.3.3 Dynamic Treatment Recommendation --15.3.4 Dynamic Therapy Regimes Using Data from the Medical Registry -- 15.3.5 Encouraging Physical Activity in Diabetes Patients -- 15.3.6 Diagnosis Utilizing Medical Images -- 15.3.7 Clinical Research for Non-Small Cell Lung Cancer -- 15.3.8 Segmentation of Transrectal Ultrasound Images -- 15.3.9 Personalized Control of Glycemia in Septic Patients -- 15.3.10 An Al Structure for Simulating Clinical Decision-Making -- 15.4 Challenges -- 15.5 Conclusion -- References --Chapter 16 Cognitive Computing in Smart Cities and Healthcare -- 16.1 Introduction -- 16.2 Machine Learning Inventions and Its Applications -- 16.3 What is Reinforcement Learning and Cognitive Computing? --16.4 Cognitive Computing -- 16.5 Data Expressed by the Healthcare and Smart Cities -- 16.6 Use of Computers to Analyze the Data and Predict the Outcome -- 16.7 Machine Learning Algorithm -- 16.8 How to Perform Machine Learning? -- 16.9 Machine Learning Algorithm --16.10 Common Libraries for Machine Learning Projects -- 16.11 Supervised Learning Algorithm -- 16.12 Future of the Healthcare --16.13 Development of Model and Its Workflow -- 16.13.1 Types of Evaluation -- 16.14 Future of Smart Cities -- 16.15 Case Study I --16.16 Case Study II -- 16.17 Case Study III -- 16.18 Case Study IV --16.19 Conclusion -- References -- Index -- EULA.

Sommario/riassunto

COGNITIVE ANALYTICS AND REINFORCEMENT LEARNING The combination of cognitive analytics and reinforcement learning is a transformational force in the field of modern technological breakthroughs, reshaping the decision-making, problem-solving, and innovation landscape; this book offers an examination of the profound overlap between these two fields and illuminates its significant consequences for business, academia, and research. Cognitive analytics and reinforcement learning are pivotal branches of artificial intelligence. They have garnered increased attention in the research field and industry domain on how humans perceive, interpret, and respond to information. Cognitive science allows us to understand data, mimic human cognitive processes, and make informed decisions to identify patterns and adapt to dynamic situations. The process enhances the capabilities of various applications. Readers will uncover the latest advancements in AI and machine learning, gaining valuable insights into how these technologies are revolutionizing various industries, including transforming healthcare by enabling smarter diagnosis and treatment decisions, enhancing the efficiency of smart cities through dynamic decision control, optimizing debt collection strategies, predicting optimal moves in complex scenarios like chess. and much more. With a focus on bridging the gap between theory and practice, this book serves as an invaluable resource for researchers and industry professionals seeking to leverage cognitive analytics and reinforcement learning to drive innovation and solve complex

problems. The book's real strength lies in bridging the gap between theoretical knowledge and practical implementation. It offers a rich tapestry of use cases and examples. Whether you are a student looking to gain a deeper understanding of these cutting-edge technologies, an Al practitioner seeking innovative solutions for your projects, or an industry leader interested in the strategic applications of Al, this book offers a treasure trove of insights and knowledge to help you navigate the complex and exciting world of cognitive analytics and reinforcement learning. Audience The book caters to a diverse audience that spans academic researchers, Al practitioners, data scientists, industry leaders, tech enthusiasts, and educators who associate with artificial intelligence, data analytics, and cognitive sciences.