

1. Record Nr.	UNINA9910555251603321
Autore	Yu Wen (Robotics engineer)
Titolo	Human-robot interaction control using reinforcement learning // Wen Yu, Adolfo Perrusquia
Pubbl/distr/stampa	Hoboken, New Jersey : , : IEEE Press : , : Wiley, , [2022] ©2022
ISBN	1-119-78276-7 1-119-78277-5 1-119-78275-9
Descrizione fisica	1 online resource (289 pages)
Collana	IEEE Press series on systems science and engineering
Disciplina	629.8924019
Soggetti	Human-robot interaction Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover -- Title Page -- Copyright -- Contents -- Author Biographies -- List of Figures -- List of Tables -- Preface -- Part I Humanrobot Interaction Control -- Chapter 1 Introduction -- 1.1 HumanRobot Interaction Control -- 1.2 Reinforcement Learning for Control -- 1.3 Structure of the Book -- References -- Chapter 2 Environment Model of HumanRobot Interaction -- 2.1 Impedance and Admittance -- 2.2 Impedance Model for HumanRobot Interaction -- 2.3 Identification of HumanRobot Interaction Model -- 2.4 Conclusions -- References -- Chapter 3 Model Based HumanRobot Interaction Control -- 3.1 Task Space Impedance/Admittance Control -- 3.2 Joint Space Impedance Control -- 3.3 Accuracy and Robustness -- 3.4 Simulations -- 3.5 Conclusions -- References -- Chapter 4 Model Free HumanRobot Interaction Control -- 4.1 TaskSpace Control Using JointSpace Dynamics -- 4.2 TaskSpace Control Using TaskSpace Dynamics -- 4.3 Joint Space Control -- 4.4 Simulations -- 4.5 Experiments -- 4.6 Conclusions -- References -- Chapter 5 Humanintheloop Control Using Euler Angles -- 5.1 Introduction -- 5.2 JointSpace Control -- 5.3 TaskSpace Control -- 5.4 Experiments -- 5.5 Conclusions -- References -- Part II Reinforcement Learning for Robot Interaction

Control -- Chapter 6 Reinforcement Learning for Robot Position/Force Control -- 6.1 Introduction -- 6.2 Position/Force Control Using an Impedance Model -- 6.3 Reinforcement Learning Based Position/Force Control -- 6.4 Simulations and Experiments -- 6.5 Conclusions -- References -- Chapter 7 ContinuousTime Reinforcement Learning for Force Control -- 7.1 Introduction -- 7.2 Kmeans Clustering for Reinforcement Learning -- 7.3 Position/Force Control Using Reinforcement Learning -- 7.4 Experiments -- 7.5 Conclusions -- References -- Chapter 8 Robot Control in WorstCase Uncertainty Using Reinforcement Learning.
8.1 Introduction -- 8.2 Robust Control Using DiscreteTime Reinforcement Learning -- 8.3 Double QLearning with kNearest Neighbors -- 8.4 Robust Control Using ContinuousTime Reinforcement Learning -- 8.5 Simulations and Experiments: Discrete Time Case -- 8.6 Simulations and Experiments: ContinuousTime Case -- 8.7 Conclusions -- References -- Chapter 9 Redundant Robots Control Using MultiAgent Reinforcement Learning -- 9.1 Introduction -- 9.2 Redundant Robot Control -- 9.3 MultiAgent Reinforcement Learning for Redundant Robot Control -- 9.4 Simulations and experiments -- 9.5 Conclusions -- References -- Chapter 10 Robot 2 Neural Control Using Reinforcement Learning -- 10.1 Introduction -- 10.2 2 Neural Control Using DiscreteTime Reinforcement Learning -- 10.3 2 Neural Control in Continuous Time -- 10.4 Examples -- 10.5 Conclusion -- References -- Chapter 11 Conclusions -- A Robot Kinematics and Dynamics -- A.1 Kinematics -- A.2 Dynamics -- A.3 Examples -- References -- B Reinforcement Learning for Control -- B.1 Markov decision processes -- B.2 Value functions -- B.3 Iterations -- B.4 TD learning -- Reference -- Index -- EULA.
