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Nota di contenuto	Cover; Title Page; Copyright; Preface; References; Chapter 1: A Brief Review of Supervised Learning; 1.1 Least Squares Estimates; 1.2 Recursive Least Squares; 1.3 Least Mean Squares; 1.4 Stochastic Approximation; References; Chapter 2: Single-Agent Reinforcement Learning; 2.1 Introduction; 2.2 n-Armed Bandit Problem; 2.3 The Learning Structure; 2.4 The Value Function; 2.5 The Optimal Value Functions; 2.6 Markov Decision Processes; 2.7 Learning Value Functions; 2.8 Policy Iteration; 2.9 Temporal Difference Learning; 2.10 TD Learning of the State-Action Function; 2.11 Q-Learning 2.12 Eligibility TracesReferences; Chapter 3: Learning in Two-Player Matrix Games; 3.1 Matrix Games; 3.2 Nash Equilibria in Two-Player Matrix Games; 3.3 Linear Programming in Two-Player Zero-Sum Matrix Games; 3.4 The Learning Algorithms; 3.5 Gradient Ascent Algorithm; 3.6 WoLF-IGA Algorithm; 3.7 Policy Hill Climbing (PHC); 3.8 WoLF-PHC Algorithm; 3.9 Decentralized Learning in Matrix Games; 3.10 Learning Automata; 3.11 Linear Reward-Inaction Algorithm; 3.12 Linear Reward-

Penalty Algorithm; 3.13 The Lagging Anchor Algorithm; 3.14 L R-I Lagging Anchor Algorithm; References

Chapter 4: Learning in Multiplayer Stochastic Games

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4.15 Simulation and Results Comparing EMA Q-Learning to Other Methods

References; Chapter 5: Differential Games; 5.1 Introduction; 5.2 A Brief Tutorial on Fuzzy Systems; 5.3 Fuzzy Q-Learning; 5.4 Fuzzy Actor-Critic Learning; 5.5 Homicidal Chauffeur Differential Game; 5.6 Fuzzy Controller Structure; 5.7 Q()-Learning Fuzzy Inference System; 5.8 Simulation Results for the Homicidal Chauffeur; 5.9 Learning in the Evader-Pursuer Game with Two Cars; 5.10 Simulation of the Game of Two Cars; 5.11 Differential Game of Guarding a Territory

5.12 Reward Shaping in the Differential Game of Guarding a Territory

5.13 Simulation Results; References; Chapter 6: Swarm Intelligence and the Evolution of Personality Traits; 6.1 Introduction; 6.2 The Evolution of Swarm Intelligence; 6.3 Representation of the Environment; 6.4 Swarm-Based Robotics in Terms of Personalities; 6.5 Evolution of Personality Traits; 6.6 Simulation Framework; 6.7 A Zero-Sum Game Example; 6.8 Implementation for Next Sections; 6.9 Robots Leaving a Room; 6.10 Tracking a Target; 6.11 Conclusion; References; Index; End User License Agreement

## Sommario/riassunto

"Multi-Agent Machine Learning: A Reinforcement Learning Approach is a framework to understanding different methods and approaches in multi-agent machine learning. It also provides cohesive coverage of the latest advances in multi-agent differential games and presents applications in game theory and robotics. Framework for understanding a variety of methods and approaches in multi-agent machine learning. Discusses methods of reinforcement learning such as a number of forms of multi-agent Q-learning Applicable to research professors and graduate students studying electrical and computer engineering, computer science, and mechanical and aerospace engineering"--

"Provide an in-depth coverage of multi-player, differential games and Gam theory"--