

Artificial Intelligence and Machine Learning

Chapter	Title	Page. No
1	Introduction to Artificial Intelligence: History, Evolution, and Key Concepts	12
2	Intelligent Agents and Environments: Foundations of AI and Interactions with the Physical World	39
3	Advanced Problem-Solving Techniques and Heuristic Search Algorithms in AI	75
4	Introduction to Machine Learning: Fundamentals, Techniques, and Applications	118
5	Comprehensive Data Preprocessing and Feature Engineering for Optimized Machine Learning Models	153
6	Detailed Study of Supervised Learning Algorithms and Their Applications in Real-World Scenarios	185
7	In-Depth Exploration of Unsupervised Learning Algorithms and Techniques for Pattern Discovery	218
8	Ensemble Methods in Machine Learning: Boosting, Bagging, and Stacking for Enhanced Model Performance	251
9	Neural Networks and Deep Learning Architectures: From Basics to Advanced Implementations	288
10	Reinforcement Learning: Algorithms, Techniques, and Applications in Complex Decision-Making	324
11	AI in Natural Language Processing: Techniques, Challenges, and Applications in Text and Speech Analysis	359
12	AI in Computer Vision: Image Processing, Object Detection, and Recognition Techniques	392
13	Applications of AI in Healthcare: Diagnostics, Treatment Planning, and Predictive Analytics	426
14	AI in Finance: Algorithmic Trading, Risk Management, and Financial Forecasting	456
15	AI in Autonomous Systems: Robotics, Self-Driving Cars, and Intelligent Control Systems	484
16	Implementing Transfer Learning and Domain Adaptation in IoT Analytics	516