

Preface

Reinforcement Learning (RL) has emerged as a transformative technology for developing intelligent autonomous systems capable of learning optimal decision-making through continuous interaction with dynamic environments. Its integration with smart robotics and industrial automation has significantly enhanced operational efficiency, adaptability, precision, and safety across modern manufacturing and service industries. This book explores the latest advancements in RL-driven autonomous systems, covering fundamental concepts, advanced algorithms, industrial applications, robotic control, simulation environments, and future research directions. It provides researchers, academicians, students, and industry professionals with a comprehensive understanding of how reinforcement learning is shaping the next generation of intelligent robotic and automated industrial systems.