



Foundations of Robotics & Automation (Theory & Practice)

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Description

Salient Features of the Book :

1. Evolution of Robotics and Automation : Traces the fascinating of robotics from mechanical origins to cutting- edge automation.
2. Linear Algebra : Essential for solving complex robotics challenges using vectors, matrices , and transformations.
3. Calculus : A powerful tool for modeling and controlling robotic systems with precision and agility.
4. Differential Equations : Vital for understanding the dynamic behavior of robotic systems and automating processes.
5. Probability and statistics : Key for decision- making hypothesis testing, and driving machine learning in robotics.
6. Control Theory : Mastering the behavior of dynamic systems through feedback loops and stability analysis.
7. Kinematics and Dynamics : Analyses motion and force, essential for understanding robotic movement and interaction.
8. Machine Learning and AI : Explores intelligent systems that adapt, learn, and revolutionize automation.
9. Graph Theory : Solves real- world problems by analyzing networks and connections across domains.
10. Numerical Methods : Provides computational techniques for practical solutions to engineering challenges.
11. Signal processing : Interprets and analyses vast streams of data in the digital landscape for better decision -making.
12. Optimization : Focuses on finding the most efficient solutions for enhancing robotic performance.
13. Computer Vision : Enables robots to perceive and interpret their environment through AI- driven imaging.
14. Quantum Computing : Explores the future of robotics with quantum-level computation, unlocking unimaginable potential.

This book offers a profound blend of theory and practice, charting the path toward the next generation of intelligent robotics & automation.

About the Author(s)

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