

Robot Kinematics and Dynamics: Modelling, Planning and Control

Scope of the book: The robotics field is undergoing a profound transformation. Classical models and rigid systems are giving way to adaptive, intelligent, and embodied agents capable of learning, collaborating, and evolving across physical, digital, and social domains. Robot kinematics and dynamics will be a research-driven, technically rigorous volume exploring next-generation advances and critical unresolved challenges in robotics. It is intended to serve as a strategic reference for advanced undergraduate & postgraduate students, academic researchers, and Research & Development professionals in robotics, AI, and automation.

Proposed Chapters:

- Chapter 1:** Beyond Classical Kinematics - Lie Group Methods for Complex Mechanisms
- Chapter 2:** Soft Robotic Actuation and Morphological Computation
- Chapter 3:** Embodied AI - From End to End Learning to World Model Discovery
- Chapter 4:** Advanced Perception: Event Cameras, Neuromorphic Vision and Tactile Arrays
- Chapter 5:** Cloud and Edge Robotics - Federated Learning and 5G/6G Connectivity
- Chapter 6:** Human–Robot Shared Autonomy and Explainable Decision Making
- Chapter 7:** Robot Ethics, Policy and Socio Economic Impact
- Chapter 8:** Energy Aware Robotics - Battery Chemistry, Super-capacitors and Power Optimal Control
- Chapter 9:** Modular and Reconfigurable Robots - Self Assembly and Self Repair
- Chapter 10:** Swarm Robotics and Collective Intelligence at Scale
- Chapter 11:** Biomechatronic Integration — Robot–Human Physical Merges
- Chapter 12:** Safety Critical Control and Formal Verification
- Chapter 13:** Quantum Enhanced Sensing and Control Potentials
- Chapter 14:** Robotics in Extreme Environments - Space, Deep Sea, and Nuclear
- Chapter 15:** Future Roadmap and Grand Challenges

Important Dates:

Full Chapter Submission: 15th August 2026
Acceptance Notification: 25th August 2026
Final Camera-ready Chapter: 15th Sept. 2026

Editors:



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General Guidelines:

- Similarity Index must be below 10%
- AI generated content must be 0%
- All submitted chapters will be checked by Turnitin
- Authors must submit original quality work of 18-20 pages. Chapters should be chosen from the listed proposed chapters only
- Failure to meet this criteria will not be accepted

Note: Indexing of the book will be decided after publication, many published books under this series are indexed at SCOPUS. There are no publication and processing charges. During chapter submission do not forget to mention under subject, "Chapter number: Book title." For any types of queries, kindly prefer chapter submissions mail ID.

Kindly, submit full chapters via email to:
roboticschapters@gmail.com