About the Book
Going beyond the traditional field of robotics to include other mobile vehicles, Mobile Intelligent Autonomous Systems describes important theoretical concepts, techniques, approaches, and applications that can be used to build truly mobile intelligent autonomous systems (MIAS). It offers a comprehensive treatment of robotics and MIAS, as well as related disciplines, helping readers understand the subject from a system-theoretic and practical point of view. Organized into three sections, the book progresses from conceptual foundations to MIAS and robotics systems and then examines allied technologies. With an emphasis on recent research and developments, experts from various fields cover key aspects of this rapidly emerging area, including:

- Path and motion planning
- Obstacle avoidance in a dynamic environment
- Direct biological-brain control of a mobile robot
- Sensor and image data fusion
- Autonomous decision making and behavior modeling in robots
- Hydro-MiNa robot technology
- Adaptive algorithms for smart antennas
- Control methods for autonomous micro-air vehicles
- Neuro-fuzzy fault-tolerant auto-landing for aircraft
- H-infinity filter based estimation for simultaneous localization and mapping

Where relevant, concepts and theories are illustrated with block/flow diagrams and numerical simulations in MATLAB®. An integrated exploration of the theory and practice of MIAS and robotics, this is a valuable reference and recipe book for research and industry.

Salient Features
- Provides up-to-date coverage of the emerging MIAS field
- Describes various sensors and instruments used in robotic and MIAS systems
- Emphasizes the sensor modeling and data analysis aspects of MIAS
- Offers a MATLAB-based approach within certain case studies

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Part II MIAS and Robotics
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Jitendra R. Raol, Ph.D., is retired from the National Aerospace Laboratories (NAL), where he was Scientist-G and head of the Flight Mechanics and Control Division (FMCD). He was elected a fellow of the IEE (UK), was a senior member of the IEEE (US), is a life-fellow of the Aeronautical Society of India, and a life member of the System Society of India. Dr. Raol has published 110 research papers and several reports and has guest-edited two special issues each of Sadhana and the Defense Science Journal. He is a reviewer of several national and international journals and has served as a chairman and member of several technical and examination committees. He is the (co-) author of Modelling and Parameter Estimation for Dynamic Systems, (IEE/IET, 2004), Flight Mechanics Modeling and Analysis (CRC Press, 2008) and Multi-Sensor Data Fusion with MATLAB (CRC Press, 2009). He has also written collections of poems: Poetry of Life, Sandy Bonds, Timeless
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