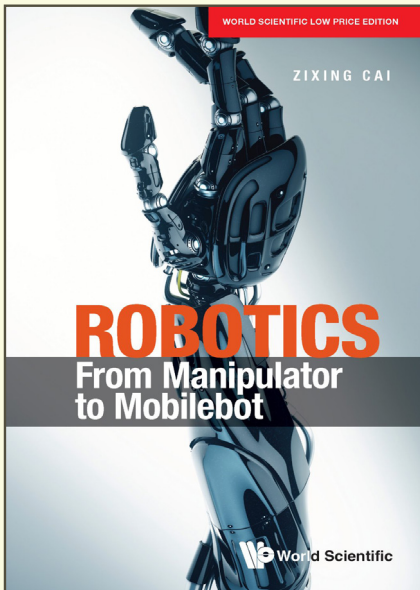


Robotics

From Manipulator to Mobilebot

By **Zixing Cai**

(Central South University, China & ZIXING Academy of AI, China)



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ABOUT THE BOOK

This book is a comprehensive collection and practical guide on robotics derived from the author's research in robotics since 1988. The Chinese edition of this book has sold over 300,000 copies, and is one of the best-selling books on robotics in China.

The book covers the core technology of robotics, including the basic theories and techniques of robot manipulator, mobile robots to focus on location navigation, and intelligent control underpinned by artificial intelligence and deep learning. Several case studies from national research projects in China are also included to help readers understand the theoretical foundations of robotics and related application developments. This book is a valuable reference for undergraduate and graduate students of robotics courses.

READERSHIP

Advanced undergraduate, graduate and post-grad researcher in the discipline/profession of robotics, automatic control, mechatronic engineering, intelligent S&T, computer science and engineering, electronic engineering, management and decision system engineering, and other related fields.

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- **Robot Manipulator:**
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- Mobilebot Navigation
- Intelligent Control of Mobile Robots
- **Applications and Prospect of Robotics:**
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 - Robotics Outlook

ABOUT THE AUTHOR

Zixing Cai is an IEEE Fellow and IEEE Life Fellow, academician of the International Academy of Navigation and Motion Control, CAAI Fellow, AAIA Follow, academician of the New York Academy of Sciences, United Nations Expert (UNIDO), Professor and Doctoral Supervisor of the School of Information Science and Engineering at Central South University, China, and Chief Scientist of Hunan ZIXING Academy of Artificial Intelligence. He has served as the Vice President of the Chinese Association for Artificial Intelligence (CAAI) and Founding Director of the Intelligent Robotics Professional Committee of CAAI; Honorary Chairman of Hunan Society of Artificial Intelligence, China; Director of the Chinese Association of Automation (CAA) and member of Intelligent Automation Professional Committee of CAA; Member of the Artificial Intelligence and Pattern Recognition Professional Committee of the Chinese Computer Federation (CCF); Member of the Evaluation Committee of the IEEE Computational Intelligence Society (CIS); and Member of the IEEE CIS Evolutionary Computing Technology Committee. Prof Cai has also served as an Adjunct Professor at Rensselaer Polytechnic Institute (RPI), USA; St. Petersburg Technical University, Russia; Technical University of Denmark; Peking University, China; National University of Defense Technology, China; Beijing University of Aeronautics and Astronautics, China; Beijing University of Posts and Telecommunications, China; etc., and a Visiting Researcher at the Institute of Automation, Chinese Academy of Sciences; St. Petersburg Automation and Informatics Institute, Russian Academy of Sciences; and so on. Prof Cai is an academic leader in the fields of artificial intelligence, intelligent control and robotics in China.

He was awarded the Outstanding Robotics Education Award during the China Robotics Congress, and the Outstanding Robotics Education Award of the Chinese Association of Artificial Intelligence. Prof Cai is also the winner of the first National College Teachers Award, the Wu Wenjun Artificial Intelligence Technology Achievement Award, Xu Teli Education Award, and BaoSteel National Excellent Teacher Award. He was also awarded the First Prize of the Science and Technology Progress Award of the National Ministry of Education, and the First Prize of the National Excellent Teaching Material Award of Higher Education and other important awards.

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