Automation is undergoing a major transformation in scope and dimension and plays an increasingly important role in the global economy and in our daily lives. Engineers combine automated devices with mathematical and organizational tools to create complex systems for a rapidly expanding range of applications and human activities. The Springer Handbook of Automation incorporates these new developments and presents a widespread and well-structured conglomeration of new emerging application areas of automation. Besides manufacturing as a primary application of automation, the handbook provides the most advanced, comprehensive, and balanced coverage of the technical and engineering aspects of automation. It covers all the major cutting-edge technologies of production automation and material handling, and contains new application areas such as medical systems and health, transportation, security and maintenance, service, construction and retail as well as production or logistics.

This Springer Handbook, edited by an internationally renowned and experienced expert is not only an ideal resource for automation experts but also for people new to this expanding field such as engineers, computer scientists, designers.

Key Topics

- Development and impacts of automation
- Theory and scientific foundations
- Design theory, elements, and methods including integration
- Industrial automation, infrastructure and service
- Medical and healthcare systems
- Home, office, and enterprise automation

Features

- Contains over 1005 color illustrations (including 222 four-color) many from real-world industry sources and 149 tables
- Comprehensive coverage of the fundamentals
- Ideal resource not only for automation experts
- Emphasizes concepts over extensive mathematical derivations
- Goes beyond the applications in industrial settings
- Cross-referenced parts and chapters with summaries
- Detailed index and fully searchable DVD-ROM guarantee quick access to data and links to other sources