“Wireless sensor and actuator nets, also known as motes and smart dust, are
an emerging computer class based on a new platform, networking structure,
and interface that enable novel, low cost, high volume, applications. This
text and reference is a critical link to create this new class by covering the
field of study for both practitioners and researchers.”

—Gordon Bell, Senior Researcher, Microsoft Corporation

“This book provides both an insightful overview of the emerging field of
wireless sensor networks, and an in depth treatment of algorithmic signal and
information processing issues. An excellent text for both professionals and
students!”

—Deborah Estrin, Center for Embedded Networked Sensing, UCLA

Designing, implementing, and operating a wireless sensor network involves a wide range of disciplines and many
application-specific constraints. To make sense of and take advantage of these systems, a holistic approach is
needed—and this is precisely what *Wireless Sensor Networks* delivers.

Inside, two eminent researchers review the diverse technologies and techniques that interact in today’s wireless
sensor networks. At every step, they are guided by the high-level information-processing tasks that determine how
these networks are architected and administered. Zhao and Guibas begin with the canonical problem of localizing
and tracking moving objects, then systematically examine the many fundamental sensor network issues that
spring from it, including network discovery, service establishment, data routing and aggregation, query
processing, programming models, and system organization. The understanding gained as a result—how different
layers support the needs of different applications, and how a wireless sensor network should be built to optimize
performance and economy—is sure to endure as individual component technologies come and go.

**Features**

- Written for practitioners, researchers, and students and relevant to all application areas, including
  environmental monitoring, industrial sensing and diagnostics, automotive and transportation, security and
  surveillance, military and battlefield uses, and large-scale infrastructural maintenance.
- Skillfully integrates the many disciplines at work in wireless sensor network design: signal processing
  and estimation, communication theory and protocols, distributed algorithms and databases, probabilistic
  reasoning, energy-aware computing, design methodologies, evaluation metrics, and more.
- Demonstrates how querying, data routing, and network self-organization can support high-level
  information-processing tasks.
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