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Sommario/riassunto

Energy-Efficient Communication Networks is essential for anyone looking to understand and implement cutting-edge energy optimization strategies for communication systems, ensuring they meet growing energy demands while seamlessly integrating renewable energy sources and enhancing battery life in embedded applications. Renewable energy, including solar, wind, and geothermal energy, for communication networks is a key area of exploration for meeting the demands of their increasing energy requirements. Scheduling and power cycle optimization are instrumental in deciding the effectiveness of these networks. Apart from communication, embedded systems running on batteries designed for data processing applications also face restrictions in terms of battery life--targeting low-energy consumption-based systems is particularly important here. The increased usage of sensor networks for personal and commercial applications has resulted in a surge of development to create energy-aware protocols and algorithms. This book introduces energy optimization concepts for current and future communication networks and explains how to optimize electricity for wireless sensor networks and incorporate renewable energy sources into conventional communication networks. It gives readers a better understanding of the difficulties, limitations, and possible bottlenecks that may occur while developing a communication system under power constraints, as well as insights into the traditional and recently developed communication systems from an energy optimization point of view.
