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Nota di contenuto	Preface vii -- About the Author ix -- Part One Computer Engineering -- 1. Digital Logic and Microprocessor Design 3 -- 2. Case Study in Computer Design 63 -- 3. Analog and Digital Computer Interactions 83 -- Part Two Network Engineering -- 4. Integrated Software and Real-Time System Design with Applications 99 -- 5. Network Systems 125 -- 6. Future Internet Performance Models 143 -- 7. Network Standards 211 -- 8. Network Reliability and Availability Metrics 228 -- Part Three Software Engineering -- 9. Programming Languages 263 -- 10. Operating Systems 286 -- 11. Software Reliability and Safety 303 -- Part Four Integration of Disciplines -- 12. Integration of Hardware and Software Reliability 315 -- Part Five Applications -- 13. Applying Neural Networks to Software Reliability Assessment 337 -- 14. Web Site Design 354 -- 15. Mobile Device Engineering 377 -- 16. Signal-Driven Software Model for Mobile Devices 396 -- 17. Object-Oriented Analysis and Design Applied to Mathematical Software 420 -- 18. Tutorial on

Sommario/riassunto

There are many books on computers, networks, software, or hardware engineering. However, this one is different: it provides a comprehensive approach that integrates all of these components with applications. Moreover, it takes into account the people and organizations who depend on computer systems, enabling readers to design and deploy a seamless and secure computer-based system that meets the needs of all users. Computer, Network, Software, and Hardware Engineering with Applications sets forth a step-by-step, total system approach to quantitatively analyze the performance, reliability, maintainability, and availability of computers, networks, software, and hardware. Moreover, the author explains how to evaluate and minimize the risk when deploying these integrated systems. Following the author's clear explanations, readers will master:

- Quantitative models to solve core computer, network, software, and hardware engineering problems.
- Mathematical and statistical models to test for reliability, maintainability, and availability.
- Statistical process and product control.
- Fault tree analysis and risk management.
- Effective resource allocation and assignment.
- Comprehensive computer and network security.
- Optimal network routing

Each chapter begins with an abstract outlining the core concepts. Throughout the book, quantitative examples help readers understand and interpret model results. Practice problems enable readers to use the principles set forth in the book to design and implement their own integrated solutions. This book is ideal for students and professionals in computer, network, software, and hardware engineering. It will provide them with an essential set of tools and a new big-picture perspective for designing and implementing optimal computer-based systems solutions.