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Nota di contenuto	Front Cover; Control System Design Guide: Using Your Computer to Understand and Diagnose Feedback Controllers; Copyright; Dedication; Contents; Praise for the new edition; Preface; What's New in this Edition?; Organization of the Book; Reader Feedback; Acknowledgments; Section I - Applied Principles of Controls; Chapter 1 - Introduction to Controls; 1.1 Visual ModelQ Simulation Environment; 1.2 The Control System; 1.3 The Controls Engineer; Chapter 2 - The Frequency Domain; 2.1 The Laplace Transform; 2.2 Transfer Functions; 2.3 Examples of Transfer Functions; 2.4 Block Diagrams; 2.5 Phase and Gain 2.6 Measuring Performance 2.7 Questions; Chapter 3 - Tuning a Control System; 3.1 Closing Loops; 3.2 A Detailed Review of the Model; 3.3 The Open-Loop Method; 3.4 Margins of Stability; 3.5 A Zone-Based Tuning Procedure; 3.6 Variation in Plant Gain; 3.7 Multiple (Cascaded) Loops; 3.8 Power Converter Saturation and Synchronization; 3.9 Phase vs. Gain Plots; 3.10 Questions; Chapter 4 - Delay in Digital Controllers; 4.1 How

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### Sommario/riassunto

Control Systems Design Guide has helped thousands of engineers to improve machine performance. This fourth edition of the practical guide has been updated with cutting-edge control design scenarios, models and simulations enabling apps from battlebots to solar collectors. This useful reference enhances coverage of practical applications via the inclusion of new control system models, troubleshooting tips, and expanded coverage of complex systems requirements, such as increased speed, precision and remote capabilities, bridging the gap between the complex, math-heavy control theory and

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