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		Automatic control
		Robotics
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	Nota di contenuto	Preface -- Preface to the second edition -- Introduction -- Part I. Elements of Classical Control Theory -- Chapter 1. Controllability and Observability -- Chapter 2. Stability and Stabilizability -- Chapter 3. Controllability with Vanishing Energy -- Chapter 4. Systems with Constraints -- Chapter 5. Realization Theory -- Part II. Nonlinear Control Systems -- Chapter 6. Controllability and Observability of Nonlinear Systems -- Chapter 7. Stability and Stabilizability -- Chapter 8. Realization Theory -- Part III. Optimal Control -- Chapter 9. Dynamic Programming -- Chapter 10. Viscosity Solutions of Bellman Equations -- Chapter 11. Dynamic Programming for Impulse Control -- Chapter 12. The Maximum Principle -- Chapter 13. The Existence of Optimal

Sommario/riassunto	This textbook presents, in a mathematically precise manner, a unified introduction to deterministic control theory. With the exception of a few more advanced concepts required for the final part of the book, the presentation requires only a knowledge of basic facts from linear algebra, differential equations, and calculus. In addition to classical concepts and ideas, the author covers the stabilization of nonlinear systems using topological methods, realization theory for nonlinear systems, impulsive control and positive systems, the control of rigid bodies, the stabilization of infinite dimensional systems, and the solution of minimum energy problems. This second edition includes new chapters that introduce a variety of topics, such as controllability with vanishing energy, boundary control systems, and delayed systems. With additional proofs, theorems, results, and a substantially larger index, this new edition will be an invaluable resource for students and researchers of control theory. Mathematical Control Theory: An Introduction will be ideal for a beginning graduate course in mathematical control theory, or for self-study by professionals needing a complete picture of the mathematical theory that underlies the applications of control theory. From reviews of the first edition: At last! We did need an introductory textbook on control which can be read, understood, and enjoyed by anyone. Gian-Carlo Rota, The Bulletin of Mathematics Books It covers a remarkable number of topics...The exposition is excellent, and the book is a joy to read. A novel one-semester course covering both linear and nonlinear systems could be given...The book is an excellent one for introducing a mathematician to control theory. Bulletin of the AMS Indeed, for mathematicians who look for the basic ideas or a general picture about the main branches of control theory, I believe this book can provide an excellent bridge to this area. IEEE Control Systems Magazine.