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Sommario/riassunto	This book discusses the formalization of mathematical theories centering on complex analysis and matrix theory, covering topics such as algebraic systems, complex numbers, gauge integration, the Fourier transformation and its discrete counterpart, matrices and their transformation, inner product spaces, and function matrices. The formalization is performed using the interactive theorem prover HOL4, chiefly developed at the University of Cambridge. Many of the developments presented are now integral parts of the library of this prover. As mathematical developments continue to gain in complexity, sometimes demanding proofs of enormous sizes, formalization has proven to be invaluable in terms of obtaining real confidence in their correctness. This book provides a basis for the computer-aided verification of engineering systems constructed using the principles of complex analysis and matrix theory, as well as building blocks for the formalization of more involved mathematical theories.