1. Record Nr. UNINA9911047799303321

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Titolo	Computable structure theory : a unified approach / / Rodney G. Downey, Alexander Melnikov
Pubbl/distr/stampa	Cham : , : Springer, , [2026] ©2026
ISBN	9783031924330
Edizione	[1st ed.]
Descrizione fisica	1 online resource (xii, 540 pages) : illustrations
Collana	Theory and applications of computability, In cooperation with the Association Computability in Europe, , 2190-6203
Altri autori (Persone)	MelnikovAlexander
Disciplina	511.352
Soggetti	Computer science Computer arithmetic and logic units Algorithms Computable functions Recursion theory Theory of Computation Arithmetic and Logic Structures Computability and Recursion Theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Part I Foundation of Computability -- 1. Introduction -- 2. Basics of Computability Theory -- 3. Computable Algebraic Structures -- 4. Computable Separable Spaces -- Part II Computable Duality -- 5. Computable Boolean Algebras -- 6. Computable Stone Spaces -- 7. Computable Abelian Groups -- 8. Computable Connected Compact Spaces -- Part III Computability and Classification Problems. 9. The Analytical Hierarchy and 11-completeness -- 10. Computable Categoricity -- 11. Computable Banach Spaces with Applications -- 12. Resource Bounded Computation -- Part IV Non-computability and Randomness. 13. Randomness -- 14. Degree Spectra -- 15 -- Computable Transfinite Analysis.
Sommario/riassunto	This is the first book which gives a unified theory for countable and uncountable computable structures. The work treats computable linear orderings, graphs, groups and Boolean algebras unified with

computable metric and Banach spaces, profinite groups, and the like. Further, it provides the first account of these that exploits effective versions of dualities, such as Stone and Pontryagin dualities. The themes are effective classification and enumeration. Topics and features: · Delivers a self-contained, gentle introduction to priority arguments, directly applying them in algebraic contexts · Includes extensive exercises that both cement and amplify the materials · Provides complete introduction to the basics of computable analysis, particularly in the context of computable structures · Offers the first monograph treatment of computable Polish groups, effective profinite groups via Stone duality, and effective abelian groups via Pontryagin duality · Presents the first book treatment of Friedberg enumerations of structures This unique volume is aimed at graduate students and researchers in computability theory, as well as mathematicians seeking to understand the algorithmic content of structure theory. Being self-contained, it provides ample opportunity for self-study.