1. Record Nr. UNINA9910298566703321

Autore	Meduna Alexander
Titolo	Regulated Grammars and Automata / / by Alexander Meduna, Petr Zemek
Pubbl/distr/stampa	New York, NY : , : Springer New York : , : Imprint : Springer, , 2014
ISBN	1-4939-0369-1
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (691 p.)
Disciplina	004.0151
Soggetti	Computers Mathematical logic Computer science—Mathematics Theory of Computation Computation by Abstract Devices Mathematical Logic and Formal Languages Mathematics of Computing Discrete Mathematics in Computer Science
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and indexes.
Nota di contenuto	Introduction -- Mathematical Background -- Rudiments of Formal Language Theory -- Context-Based Grammatical Regulation -- Rule-Based Grammatical Regulation -- One-Sided Versions of Random Context Grammars -- On Erasing Rules and Their Elimination -- Extension of Languages Resulting from Regulated Grammars -- Sequential Rewriting over Word Monoids -- Regulated ET0L Grammars -- Uniform Regulated Rewriting in Parallel -- Parallel Rewriting over Word Monoids -- Regulated Multigenerative Grammar Systems -- Controlled Pure Grammar Systems -- Self-Regulating Automata -- Automata Regulated by Control Languages -- Jumping Finite Automata -- Deep Pushdown Automata -- Applications: Overview -- Case Studies -- Concluding Remarks -- Summary.
Sommario/riassunto	This is the first book to offer key theoretical topics and terminology concerning regulated grammars and automata. They are the most important language-defining devices that work under controls represented by additional mathematical mechanisms. Key topics

include formal language theory, grammatical regulation, grammar systems, erasing rules, parallelism, word monoids, regulated and unregulated automata and control languages. The book explores how the information utilized in computer science is most often represented by formal languages defined by appropriate formal devices. It provides both algorithms and a variety of real-world applications, allowing readers to understand both theoretical concepts and fundamentals. There is a special focus on applications to scientific fields including biology, linguistics and informatics. This book concludes with case studies and future trends for the field. Regulated Grammars and Automata is designed as a reference for researchers and professionals working in computer science and mathematics who deal with language processors. Advanced-level students in computer science and mathematics will also find this book a valuable resource as a secondary textbook or reference.