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Titolo	Formal Languages and Compilation / / by Stefano Crespi Reghizzi, Luca Breveglieri, Angelo Morzenti
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Descrizione fisica	1 online resource (XIII, 499 p. 486 illus.)
Collana	Texts in Computer Science, , 1868-0941
Disciplina	511.3 005.131
Soggetti	Mathematical logic Programming languages (Electronic computers) Mathematical Logic and Formal Languages Programming Languages, Compilers, Interpreters
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Syntax -- Finite Automata as Regular Language Recognizers -- Pushdown Automata and Parsing -- Translation Semantics and Static Analysis.
Sommario/riassunto	This classroom-tested and clearly-written textbook presents a focused guide to the conceptual foundations of compilation, explaining the fundamental principles and algorithms used for defining the syntax of languages, and for implementing simple translators. This significantly updated and expanded third edition has been enhanced with additional coverage of regular expressions, visibly pushdown languages, bottom-up and top-down deterministic parsing algorithms, and new grammar models. Topics and features: Describes the principles and methods used in designing syntax-directed applications such as parsing and regular expression matching Covers translations, semantic functions (attribute grammars), and static program analysis by data flow equations Introduces an efficient method for string matching and parsing suitable for ambiguous regular expressions (NEW) Presents a focus on extended BNF grammars with their general parser and with LR (1) and LL(1) parsers (NEW) Introduces a parallel parsing algorithm that

exploits multiple processing threads to speed up syntax analysis of large files Discusses recent formal models of input-driven automata and languages (NEW) Includes extensive use of theoretical models of automata, transducers and formal grammars, and describes all algorithms in pseudocode Contains numerous illustrative examples, and supplies a large set of exercises with solutions at an associated website Advanced undergraduate and graduate students of computer science will find this reader-friendly textbook to be an invaluable guide to the essential concepts of syntax-directed compilation. The fundamental paradigms of language structures are elegantly explained in terms of the underlying theory, without requiring the use of software tools or knowledge of implementation, and through algorithms simple enough to be practiced by paper and pencil. The authors are Professors (Dr. Stefano Crespi Reghizzi is Emeritus Professor) of Computer Engineering at the Politecnico di Milano, Italy.
