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		Algorithms
		Machine theory
		Software engineering
		Computer simulation
		Artificial intelligence—Data processing
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		Formal Languages and Automata Theory
		Software Engineering
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	Nota di contenuto	1. Foundations of Algorithm Engineering -- 2. Modeling -- 3. Selected Design Issues -- 4. Analysis of Algorithms -- 5. Realistic Computer Models -- 6. Implementation Aspects -- 7. Libraries -- 8. Experiments -- 9. Case Studies -- 10. Challenges in Algorithm Engineering.
	Sommario/riassunto	Algorithms are essential building blocks of computer applications. However, advancements in computer hardware, which render traditional computer models more and more unrealistic, and an ever increasing demand for efficient solution to actual real world problems have led to a rising gap between classical algorithm theory and algorithmics in practice. The emerging discipline of Algorithm Engineering aims at

bridging this gap. Driven by concrete applications, Algorithm Engineering complements theory by the benefits of experimentation and puts equal emphasis on all aspects arising during a cyclic solution process ranging from realistic modeling, design, analysis, robust and efficient implementations to careful experiments. This tutorial - outcome of a GI-Dagstuhl Seminar held in Dagstuhl Castle in September 2006 - covers the essential aspects of this process in ten chapters on basic ideas, modeling and design issues, analysis of algorithms, realistic computer models, implementation aspects and algorithmic software libraries, selected case studies, as well as challenges in Algorithm Engineering. Both researchers and practitioners in the field will find it useful as a state-of-the-art survey.