1.	Record Nr.	UNINA9910366656903321
	Titolo	Microservices : Science and Engineering / / edited by Antonio Bucchiarone, Nicola Dragoni, Schahram Dustdar, Patricia Lago, Manuel Mazzara, Victor Rivera, Andrey Sadovykh
	Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
	ISBN	3-030-31646-7
	Edizione	[1st ed. 2020.]
	Descrizione fisica	1 online resource (363 pages)
	Disciplina	006.76
	Soggetti	Software engineering Application software Software Engineering Information Systems Applications (incl. Internet)
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di contenuto	Part 1: Opening -- Microservices: The evolution and Extinction of Web Services? -- Size matters: Microservices Research and Applications -- Part 2: Migration -- Migrating to microservices -- Assessing your Microservice migration readiness -- Part 3: Modeling -- Microservices Anti-Patterns: A Taxonomy -- Modeling Microservice Conversations with RESTalk -- Graphical and Textual Model-driven Microservice Development -- Part 4: Development and Deployment -- A Formal Approach to Microservice Architecture Deployment -- Autonomic Decentralised Microservices with Gru -- A Hybrid Approach to Microservices Load Balancing -- Part 5: Applications -- Towards the digital factory: a microservice-based middleware for real-to-digital synchronization -- Using microservices to customize multi-tenant SaaS -- You are not Netflix -- Part 6: Education -- DevOps and its Philosophy : Education Matters!.
	Sommario/riassunto	This book describes in contributions by scientists and practitioners the development of scientific concepts, technologies, engineering techniques and tools for a service-based society. The focus is on microservices, i.e cohesive, independent processes deployed in isolation and equipped with dedicated memory persistence tools, which

interact via messages. The book is structured in six parts. Part 1 "Opening" analyzes the new (and old) challenges including service design and specification, data integrity, and consistency management and provides the introductory information needed to successfully digest the remaining parts. Part 2 "Migration" discusses the issue of migration from monoliths to microservices and their loosely coupled architecture. Part 3 "Modeling" introduces a catalog and a taxonomy of the most common microservices anti-patterns and identifies common problems. It also explains the concept of RESTful conversations and presents insights from studying and developing two further modeling approaches. Next , Part 4 is dedicated to various aspects of "Development and Deployment". Part 5 then covers "Applications" of microservices, presenting case studies from Industry 4.0, Netflix, and customized SaaS examples. Eventually, Part 6 focuses on "Education" and reports on experiences made in special programs, both at academic level as a master program course and for practitioners in an industrial training. As only a joint effort between academia and industry can lead to the release of modern paradigm-based programming languages, and subsequently to the deployment of robust and scalable software systems, the book mainly targets researchers in academia and industry who develop tools and applications for microservices.