

1. Record Nr.	UNINA9910373921903321
Autore	Langer Arthur M
Titolo	Analysis and Design of Next-Generation Software Architectures : 5G, IoT, Blockchain, and Quantum Computing // by Arthur M. Langer
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-030-36899-8
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (322 pages)
Disciplina	005.12
Soggetti	Software engineering Computer networks Computer engineering Internet of things Embedded computer systems Quantum computers Data protection Computer software Software Engineering Computer Communication Networks Cyber-physical systems, IoT Quantum Computing Security Professional Computing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	1. Introduction -- 2. Merging Internal Users and Consumer Requirements -- 3. Reviewing the Object Paradigm -- 4. Distributed Client/Server and Data -- 5. The Impact of 5g Wireless Communication -- 6. The Internet of Things -- 7. Blockchain Analysis and Design.
Sommario/riassunto	This book provides a detailed “how-to” guide, addressing aspects ranging from analysis and design to the implementation of applications, which need to be integrated within legacy applications and databases. The analysis and design of the next generation of

software architectures must address the new requirements to accommodate the Internet of things (IoT), cybersecurity, blockchain networks, cloud, and quantum computer technologies. As 5G wireless increasingly establishes itself over the next few years, moving legacy applications into these new architectures will be critical for companies to compete in a consumer-driven and social media-based economy. Few organizations, however, understand the challenges and complexities of moving from a central database legacy architecture to a ledger and networked environment. The challenge is not limited to just designing new software applications. Indeed, the next generation needs to function more independently on various devices, and on more diverse and wireless-centric networks. Furthermore, databases must be broken down into linked list-based blockchain architectures, which will involve analytic decisions regarding which portions of data and metadata will be processed within the chain, and which ones will be dependent on cloud systems. Finally, the collection of all data throughout these vast networks will need to be aggregated and used for predictive analysis across a variety of competitive business applications in a secured environment. Certainly not an easy task for any analyst/designer! Many organizations will continue to use packaged products and open-source applications. These third-party products will need to be integrated into the new architecture paradigms and have seamless data aggregation capabilities, while maintaining the necessary cyber compliances. The book also clearly defines the roles and responsibilities of the stakeholders involved, including the IT departments, users, executive sponsors, and third-party vendors. The book's structure also provides a step-by-step method to help ensure a higher rate of success in the context of re-engineering existing applications and databases, as well as selecting third-party products, conversion methods and cybercontrols. It was written for use by a broad audience, including IT developers, software engineers, application vendors, business line managers, and executives.
