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Sommario/riassunto	This open access book explains the state of the art in quantum software engineering and design, independent from a specific hardware. It deals with quantum software theoretical aspects and with classical software engineering concepts like agile development approaches, validation, measurement, and deployment applied in a quantum or hybrid environment, and is complemented by a number of

various industry applications. After an introductory chapter overviewing the contents of the subsequent chapters, the book is composed of three parts. It starts with a theoretical part on quantum software, as a bold declaration that quantum software theory is deep and valuable independent from the existence of specific quantum hardware. It is based upon the claim that quantum software is the more general theory subsuming classical and hybrid software system theories. The second, more extensive part deals with quantum software system and engineering design. Its quality follows from the comparison of the broad diversity of sometimes conflicting views. Moreover, the variety of approaches to design, enable the reader to make a well-pondered rational choice of preference. The book concludes with a third part, referring to multiple software applications and corresponding laboratory experiences, in order to understand their implications in practice and avoid repeating past mistakes. This book is of interest to industry professionals and researchers in academia, which are either producing or applying quantum software systems in their work or are considering their potential utility in the future. Furthermore, it also could be beneficial for practitioners already experienced with classical software engineering who desire to understand the fundamentals or possible applications of quantum software.