Foreword

A major goal of today’s software industry is to develop high-quality software on time and within budget. High quality always means that the delivered software satisfies all of its requirements. Hence, software development poses significant technical challenges for practitioners, managers, and researchers.

Software engineering as a research discipline aims to offer industry-strength methods, tools, processes, and languages to support organizations to develop high-quality software. To achieve this goal, practitioners and researchers have to collaborate and exchange experience and new and innovative ideas.

This book contributes to this goal as it reflects the pragmatic notion of software development as an engineering discipline. The authors—from academia and industry—present selected topics of a variety of important software engineering topics such as requirements engineering, software design, software quality and testing, secure software development, model-driven development, agile development methods, and software quality measurement. Interestingly, software management and software evolution is also covered. Both topics are extremely important and challenging in industry, but they are often neglected in textbooks and software engineering curricula.

All in all, the presented topics make the very different facets of software engineering approachable to researchers, practitioners, and students. Readers of this book will gain a solid appreciation of the rich scope and the diversity of software engineering.

From my point of view, the chapters on software design, model-driven development, and software quality are especially remarkable, as they provide impressive examples of problems that illustrate the delicacies and challenges that software engineers must confront.

The book presents in a thorough and readable manner current and relevant software engineering topics. It contains results that have not been published yet. For me, it was a source of new and interesting ideas as it goes far beyond my expectations. It undoubtedly contributes to establishing software engineering as a mature engineering discipline.

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