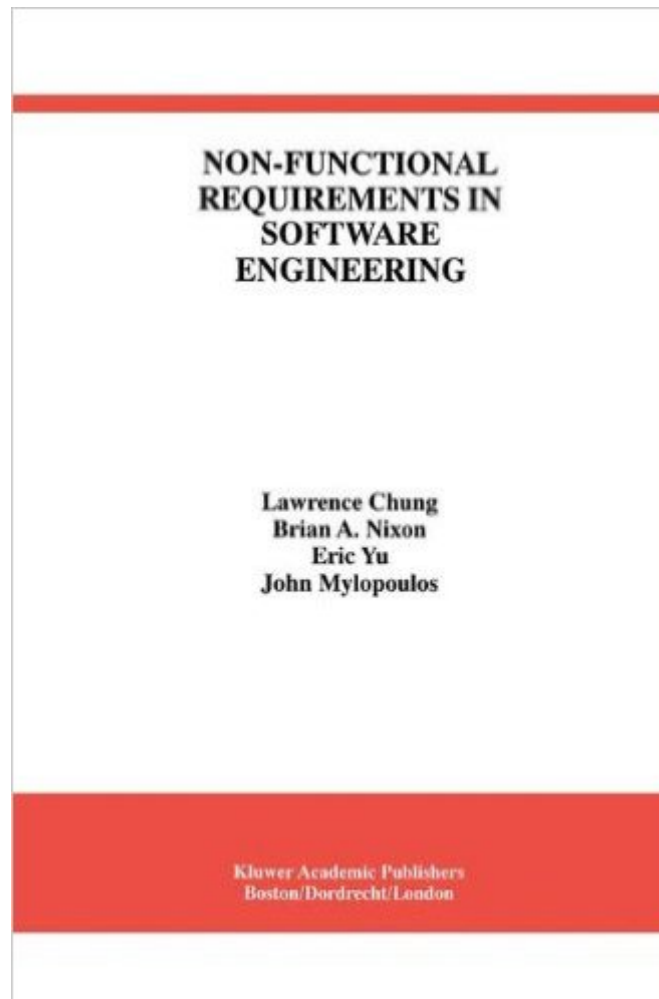


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# Non-Functional Requirements In Software Engineering (International Series In Software Engineering)



## Synopsis

Non-Functional Requirements in Software Engineering presents a systematic and pragmatic approach to 'building quality into' software systems. Systems must exhibit software quality attributes, such as accuracy, performance, security and modifiability. However, such non-functional requirements (NFRs) are difficult to address in many projects, even though there are many techniques to meet functional requirements in order to provide desired functionality. This is particularly true since the NFRs for each system typically interact with each other, have a broad impact on the system and may be subjective. To enable developers to systematically deal with a system's diverse NFRs, this book presents the NFR Framework. Structured graphical facilities are offered for stating NFRs and managing them by refining and inter-relating NFRs, justifying decisions, and determining their impact. Since NFRs might not be absolutely achieved, they may simply be satisfied sufficiently ('satisficed'). To reflect this, NFRs are represented as 'softgoals', whose interdependencies, such as tradeoffs and synergy, are captured in graphs. The impact of decisions is qualitatively propagated through the graph to determine how well a chosen target system satisfies its NFRs. Throughout development, developers direct the process, using their expertise while being aided by catalogues of knowledge about NFRs, development techniques and tradeoffs, which can all be explored, reused and customized. Non-Functional Requirements in Software Engineering demonstrates the applicability of the NFR Framework to a variety of NFRs, domains, system characteristics and application areas. This will help readers apply the Framework to NFRs and domains of particular interest to them. Detailed treatments of particular NFRs - accuracy, security and performance requirements - along with treatments of NFRs for information systems are presented as specializations of the NFR Framework. Case studies of NFRs for a variety of information systems include credit card and administrative systems. The use of the Framework for particular application areas is illustrated for software architecture as well as enterprise modelling. Feedback from domain experts in industry and government provides an initial evaluation of the Framework and some case studies. Drawing on research results from several theses and refereed papers, this book's presentation, terminology and graphical notation have been integrated and illustrated with many figures. Non-Functional Requirements in Software Engineering is an excellent resource for software engineering practitioners, researchers and students.

## Book Information

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## Customer Reviews

This book provides an excellent framework, set of tools, and methodology to make system design decisions based on analysis non-functional requirements and "softgoals," often lacking in other software engineering methodologies and tools. In chapter 14 of the book, the authors provide extensions to the tools to model to analyze strategic rationale and business goals of a system, and apply them to a hypothetical business process re-engineering example. I believe that the authors here have presented a base set of tools and methodologies that have applications far beyond the field of software engineering as demonstrated in this chapter, and I look forward very much to see where this work will lead.

From qualitative analysis to quantitative analysis it is all there. Non-functional requirements (NFRs) are like the step-child to functional requirements but this book finally gives NFRs their due. It is a must read for any person in the software/systems engineering community. Especially impressive is the graphic representations which compliment the text.

I am pleased with my purchase.

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