

Preface

With the rapid development of technology, there has been a proliferation of new services and applications. The diversity choices of users bring fierce competition as well as huge pressure to service providers. In the meantime, the level of fulfilment of customer demands and user expectations has been the most important indication to distinguish between different providers. Based on this background, the concept of quality of experience (QoE) receives much attention. Moreover, taking advantage of users and services' diversities to smartly design the resource allocation strategy is still one of the most important issues for future wireless networks.

In the past years, we have witnessed rapid progress in the advance of QoE and QoE modeling. However, there still exist some problems. For instance, most literatures on the QoE modelling only focus on the influence of technical parameters and ignore that QoE is multi-dimensional, while the researches emphasizing on various influencing factors do not explain how to model the QoE. Furthermore, how to carry out the QoE management and how to design QoE oriented radio resource management process are still open and challenging tasks. Therefore, this book carries out the study on data-driven QoE management scheme in wireless networks for mobile services.

In Chap. 1, we first give a brief introduction to QoE in wireless communication industry and the necessity to consider user QoE in current mobile service provisioning and transmission. Moreover, personalized QoE management, taking user subjective factors into account, is an emergent topic for refined and better resource utilization. In Chap. 2, QoE definitions are introduced according to different organizations or researchers besides which the state-of-the-art QoE is summarized, including QoE influencing factors, QoE assessment methods, QoE models, QoE management and control applications, and QoE challenges in 5G. To realize personalized QoE management, a data-driven QoE management architecture is proposed in Chap. 3. In Chap. 4, QoE-based resource allocation scheme is studied targeting at QoE maximization. Both conventional non-personalized QoE resource allocation scheme and personalized QoE scheme are presented and a comparison is conducted on simulation results for the two schemes. In Chap. 5, we illustrate how

the data-driven QoE assessment is conducted and some experimental details are given. Finally, the concluding remarks are presented in Chap. 6.

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