

Preface

This book describes network performance and fault analytics for LTE service providers from a practical perspective, which combines years of practical engineering experience working in the LTE service provider industry with data science and engineering insights. This unique combination of the three authors background provides innovative forward-looking approach to resolve long-standing complex network performance and fault management issues that span multiple domains.

Traditional telecommunication networks have been composed of separate vendor solutions from many domains. This resulted in disparate network management tools coming from domain-separated vendors. The radio access network (RAN) and the transport core network have been engineered and optimized in the past as separate and independent networks. This book proposes an end-to-end solution and hence an end-to-end network management and optimization architecture approach. The goal of an end-to-end optimization is a more consistent end-to-end user experience and higher network capacity and efficiency.

In this book, initial chapters present the fundamental building blocks from a bottom-up approach to provide enough background to understand the latter chapters which present solutions from a top-down approach. For example, we describe the main network types and characteristics of a typical LTE service provider network, which includes the RAN, Backhaul, Metro, and Core, as well as fundamentals of relevant data science techniques. These chapters equip the reader with the tools to understand the more advanced network performance and fault analytics methods and architectures which are presented in the latter chapters.

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