

Preface

The rise of powerful smartphones equipped with many sensors has led to a huge amount of location-based services for the outside world. These applications provide orientation, navigation, and information to users in unknown locations. However, these services have long been limited to the outside of buildings, either because GPS is unavailable inside buildings or because alternative positioning based on cell towers or Wi-Fi access points is too inaccurate. The high information value of these applications, however, has triggered a lot of research towards extending the service experience from the outside into the inside of buildings. From a computer science perspective, this has led to a beautiful area of research in which many previously isolated domains converge towards new ideas and results. This book intends to bring together some of these aspects for students and researchers in a way, such that the aesthetics of indoor location-based services becomes evident. However, writing this book was quite challenging: It is sometimes hard to correctly distinguish the relevant and the irrelevant. However, I really enjoyed writing this book, and I hope that it will be helpful in making the domain of indoor location-based services accessible and attractive for others. Due to the chosen approach of covering the basics of many previously isolated domains in one book, this book cannot serve and is not intended to be a reference or state-of-the-art review. Instead, it provides readers with the needed background to enter the research area themselves.

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Prerequisites and Foundations

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