

# Contents

## **FOREWORD vii**

*Jim Gray*

Introduction

*Jochen Schiller and Agnès Voisard* 1

## **PART 1**

### **LBS Applications**

Chapter 1

General Aspects of Location-Based Services

*Sarah Spiekermann* 9

Chapter 2

Case Study: Development of the *Find Friend* Application

*Mark Strassman and Clay Collier* 27

Chapter 3

Navigation Systems: A Spatial Database Perspective

*Shashi Shekhar, Ranga Raju Vatsavai, Xiaobin Ma, and  
Jin Soung Yoo* 41

## **PART 2**

### **Data Management and Services in LBS**

Chapter 4  
Middleware for Location-Based Services  
*Hans-Arno Jacobsen* 83

Chapter 5  
Database Aspects of Location-Based Services  
*Christian Jensen* 115

Chapter 6  
LBS Interoperability Through Standards  
*Lance McKee* 149

## **PART 3**

### **Aspects of Communication in LBS**

Chapter 7  
Data Collection  
*Joerg Roth* 175

Chapter 8  
Data Transmission in Mobile Communication Systems  
*Holger Karl* 207

Index 245

Contributor Biographies 253