Preface

We have been watching a tremendous growth of available personal sensing devices embedded in smartphones which include multiple sensors such as GPS, WiFi/3G, accelerometer, and light sensor and can run a variety of applications. Thus, using such sensors, we can collect a large amount of context information such as location, time, user's activity, etc.

The availability of users' context information, given the widespread usage of such devices with several context capture techniques at our disposal, makes possible the development of distributed context-aware systems. These support new applications and services and may enrich user-applications interactions.

Most well-known context-aware applications (e.g., social software) operate on a large scale, i.e., they involve a large number of users generating and consuming a huge number of messages carrying context information (e.g., location). In such distributed context-aware systems, we face a scalability problem of a large number of producers (sensors) transmitting information to a large number of consumers (client applications) in highly dynamic environments, with different computing capabilities, user mobility, and privacy issues.

This book addresses the above mentioned issues: scalability and privacy in distributed context-aware systems. It is organized in five chapters starting with an introduction to the theme raising the most important challenges. Then, Chap. 2 presents several important definitions (establishing a common ground for the following chapters) and a taxonomy. These are important to Chap. 3 which describes some of the most relevant distributed context-aware systems that can be classified according to the taxonomy. Privacy is addressed in Chap. 4. The book ends with Chap. 5 that presents some important conclusions.

The audience for this book is wide; researchers, students, and professionals interested in the areas addressed may find most relevant information regarding scalability and privacy in distributed context-aware systems.

Lisboa, Portugal   Paulo Ferreira
Lisboa, Portugal   Pedro Alves
October, 2013

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