

# Preface

Location-Based Services (LBS) have become a research field since the early 2000s. In recent years, lots of progress has been made in this research field, due to the increasingly maturity of the underpinning communication technologies and mobile devices. LBS have become more and more popular not only in citywide outdoor environments, but also in shopping malls, museums, and many other indoor environments. They have been applied for emergency services, tourism services, intelligent transport services, social networking, gaming, assistive services, etc.

Since its initiation by Georg Gartner from TU Wien (Austria) in 2002, the LBS conference series has become one of the most important scientific events dedicated to LBS. The conferences have been held in Vienna (2002, 2004, 2005), Hong Kong (2007), Salzburg (2008), Nottingham (2009), Guangzhou (2010), Vienna (2011), Munich (2012), Shanghai (2013), Vienna (2014), and Augsburg (2015). Starting from 2015, the LBS conferences have become the annual event of the newly established Commission on Location-Based Services of the International Cartographic Association (ICA). In November 2016, the 13th LBS conference (LBS 2016) will be hosted by TU Wien in Vienna, Austria.

This book contains a selection of peer-reviewed full papers submitted to LBS 2016. All the chapters have been accepted after a rigor reviewing process. The book provides a general picture of recent research activities related to the domain of LBS. Such activities emerged in the last years, especially concerning issues of outdoor/indoor positioning, smart environment, spatial modeling, personalization, context-awareness, cartographic communication, novel user interfaces, crowd sourcing, social media, big data analysis, usability and privacy.

We would like to thank all the authors for their excellent work and all referees for their critical and constructive reviews. We hope you enjoy reading these papers, and look forward to your participation in the future LBS conferences.

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