Epilogue

IoT Analytics is without a shadow of a doubt one of the most important elements of the IoT computing paradigm, which will probably contribute the largest portion of IoT's business value in the years to come. In this book we have introduced the main challenges that are associated with IoT analytics systems and application, along with the main technological elements that comprise non-trivial IoT applications. IoT analytics systems are essentially BigData systems, which usually have to collect, process and analyze heterogeneous high-velocity streams. Therefore data streaming infrastructures and semantic interoperability technologies for IoT streams are among the main pillars of IoT analytics systems and applications. Furthermore, cloud computing infrastructures are an integral component of IoT analytics, since they provide the capacity, scalability and elasticity required in order to deal with large amounts of IoT data.

In the scope of the book we have presented popular middleware infrastructures for handling distributed streams with high ingestion rates, along with tools and techniques for semantic modeling and interoperability of highly heterogeneous data streams stemming from different sources and devices. We have also illustrated the integration of IoT data streams in the cloud and the role of cloud computing technologies in IoT analytics. The presented infrastructures and technologies provide the reader with a sound understanding of what engineers, researchers and practitioners can nowadays use in order to implement, deploy and operate IoT analytics applications. Most of the presented systems and technologies for IoT analytics are open source, thus providing a good starting point not only for practitioners wishing to deploy the systems, but also for students and researchers wishing to explore and learn IoT analytics.

Along with IoT analytics technologies, the book has also presented a set of indicative practical deployments of IoT analytics systems in areas such as smart buildings, smart cities and crowd analytics. As part of the presentation of these applications, the use of the earlier presented technologies has been substantiated in the scope of practical systems. Moreover, the presentation of

these practical systems has illustrated the importance of machine learning and data mining technologies in the data analysis process. As part of the practical case studies we have therefore illustrated how different machine learning techniques can be developed, tested, evaluated and ultimately deployed in the context of an IoT system.

The book is certainly a good starting point understanding the scope of IoT analytics and the tools that are already available in order to build IoT applications. Neverhteless, the presented systems and applications are only the tip of the iceberg. In the coming years, systems with significantly increased sophistication and complexity will emerge, far beyond the collection, homogenization and mining of IoT streams. The emergence of such systems will drive a radical shift of IoT's focus from the "best IoT product" (e.g., the best smart-phone or wearable IoT device) to the "best IoT service" (e.g., personalized context-aware recommendations for fitness, training and a healthy lifestyle). This shift will be propelled by IoT analytics, as it will be the collection and processing of IoT data that will enable the creation of human centic IoT services in consumer markets, as well as the creation of after sales programs in the market of industrial goods and services. This shift will signal an unprecedented revolution that could completely change our everyday living. Moreover, it will also come with a shift in IoT analytics tools and techniques. This anticipated revolution however is not bound to change the value of the present book as the IoT analytics building blocks that have been presented in earlier chapers will form the foundation for the development of the novel revolutionary solutions. We really expect this book to help its readers not only to familiarize themselves with mainstream IoT analytics technologies but also to remain equipped for the rising revolution of IoT and IoT analytics.