

Making Sense of Internet of Things: using AirBox as an Example

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Abstract

With emerging concerns of air pollution and recent advances in Internet of Things (IoT) technology, air quality monitoring has become one of the most important IoT applications in many countries and major cities. In this talk, we first talk about our AirBox project, which engages citizens to participate in the PM2.5 sensing project and empowers participants to make low-cost PM2.5 sensing devices on their own. Moreover, it enables PM2.5 monitoring at a finer spatio-temporal granularity and enriches environmental data analysis by making all measurement data freely available for everyone. Then, we present a set of big data analysis using AirBox data for anomaly detection, emission source finding, and data forecast services. We also demonstrate applications that are built upon the results of AirBox data analysis.

Finally, we discuss the open challenges and research issues for future air quality monitoring IoT systems.