

## **The AirSensor Open-source R-package and DataViewer Web Application for Interpreting Community Data Collected by Low-cost Sensor Networks**

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### **ABSTRACT**

While large-scale low-cost sensor networks are now recording air pollutant concentrations at finer spatial and temporal scales than previously measured, the large environmental data sets generated by these sensor networks can become overwhelming when considering the scientific skills required to analyze the data and generate interpretable results. This paper summarizes the development of an open-source R package (*AirSensor*) and interactive web application (*DataViewer*) designed to address the environmental data science challenges of visualizing and understanding local air quality conditions with community networks of low-cost air quality sensors. *AirSensor* allows users to access historical data, add spatial metadata, and create maps and plots for viewing community monitoring data. The *DataViewer* application was developed to incorporate the functionality and plotting functions of the R package into a user-friendly web experience that would serve as the primary source for data communication for community-based organizations and citizen scientists.

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