

Sensing from the Grassroots: How Environmental Measurement Software is Being Developed by Citizen Scientists

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There are a wide variety of opportunistic weather sensor networks, ranging from academic controlled to open source and commercial but individually owned and controlled personal weather stations. Individual participation to these networks through measurement and data sharing is a well-known method of engagement, sometimes referred to as citizen science. In addition to top-down measurement projects, there are several community-created and organised sensing efforts. Less well known, compared to citizen science efforts, is how grassroots or self-directed citizen scientists create measurement software and environmental data pools.

In this talk, we present a multiple case study of how volunteers have created a bottom-up environmental sensing software project with associated hardware, with case analysis based on several years of interviews and qualitative data collection. We apply the theory of open-source microeconomics by Jullien et al. and the lens of the commons by Ostrom et al., complemented by the concept of civic coding by Knutas et al. and the palette of participation to digital citizen science by Palacin.

The main contribution of the study, as presented in this talk, is an organisational growth model adapted for community environmental software projects with pitfalls that efforts must avoid during critical junctures, recommendations for setting up community sensing projects, and finally a discussion of how these findings could be used for community engagement in opportunistic weather sensing networks.

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No

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