

A Framework for Accurate Drought Forecasting System Using Semantics-Based Data Integration Middleware

Technological advancement in Wireless Sensor Networks (WSN) has made it become an invaluable component of a reliable environmental monitoring system; they form the digital skin' through which to 'sense' and collect the context of the surroundings and provides information on the process leading to complex events such as drought. However, these environmental properties are measured by various heterogeneous sensors of different modalities in distributed locations making up the WSN, using different abstruse terms and vocabulary in most cases to denote the same observed property, causing data heterogeneity. Adding semantics and understanding the relationships that exist between the observed properties, and augmenting it with local indigenous knowledge is necessary for an accurate drought forecasting system. In this paper, we propose the framework for the semantic representation of sensor data and integration with indigenous knowledge on drought using a middleware for an efficient drought forecasting system.

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