IoT sensor network modeling with Hypergraphs

András Béleczki [a], Bálint Molnár [0000−0001−5015−8883, a], Zoltán Vincellér [a]

Eötvös Loránd University (ELTE), Budapest, Hungary
{bearaai,molnarba,vzoli}@inf.elte.hu

Abstract

The world of the Internet of Things expanding so quickly, that proper modeling methods and tools could not follow the trends for it. This means that there are possible black-areas in designing or optimizing the process of Data Lakes, Fog Computing, Cloud Computing and the integration of these different levels of data processing. Since every layer has its characteristics, homogeneously modeling them could be challenging. To bridge this various gap we recommend using hypergraphs, which can also be a suitable model for the IoT sensor networks as a foundation, and are usable for the further designing and developing methods also. For this, we also proposed an early version of a hypergraph-based data model using SAP HANA-s architecture combined with its data streaming capabilities.

Keywords: IoT, hypergraph, verification, transformation, Reliability of Information Systems.

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