

Predicting Knowledge in An Ontology Stream

Reference:

F. Lecue, J. Z. Pan, "Predicting Knowledge in An Ontology Stream," in Proceedings of the 23rd International Joint Conference on Artificial Intelligence (IJCAI 2013), pp. 2662-2669, Beijing, China, 2013.

Abstract:

Recently, ontology stream reasoning has been introduced as a multidisciplinary approach, merging synergies from Artificial Intelligence, Database, World-Wide-Web to reason on semantic augmented data streams. Although knowledge evolution and real-time reasoning have been largely addressed in ontology streams, the challenge of predicting its future (or missing) knowledge remains open and yet unexplored. We tackle predictive reasoning as a correlation and interpretation of past semantics augmented data over exogenous ontology streams. Consistent predictions are constructed as Description Logics entailments by selecting and applying relevant cross-streams association rules. The experiments have shown accurate prediction with real and live stream data from Dublin City in Ireland.