

Challenges and Innovations in Building a Product Knowledge Graph

Xin Luna Dong (Amazon)

Abstract

Knowledge graphs have been used to support a wide range of applications and enhance search results for multiple major search engines, such as Google and Bing. At Amazon we are building a Product Graph, an authoritative knowledge graph for all products in the world. The thousands of product verticals we need to model, the vast number of data sources we need to extract knowledge from, the huge volume of new products we need to handle every day, and the various applications in Search, Discovery, Personalization, Voice, that we wish to support, all present big challenges in constructing such a graph. In this talk we describe four scientific directions we are investigating in building and using such a graph, namely, harvesting product knowledge from the web, hands-off-the-wheel knowledge integration and cleaning, human-in-the-loop knowledge learning, and graph mining and graph-enhanced search. This talk will present our progress to achieve near-term goals in each direction, and show the many research opportunities towards our moon-shot goals.

Short Bio:

Xin Luna Dong is a Principal Scientist at Amazon, leading the efforts of constructing Amazon Product Knowledge Graph. She was one of the major contributors to the Google Knowledge Vault project, and has led the Knowledge-based Trust project, which is called the “Google Truth Machine” by Washington’s Post. She has co-authored book “Big Data Integration”, published 70+ papers in top conferences and journals, and given 30+ keynotes/invited-talks/tutorials. She got the VLDB Early Career Research Contribution Award for advancing the state of the art of knowledge fusion, and got the Best Demo award in Sigmod 2005. She serves in VLDB endowment and PVLDB advisory committee, is the PC co-chair for Sigmod 2018 and WAIM 2015, and serves as an area chair for Sigmod 2017, CIKM 2017, Sigmod 2015, ICDE 2013, and CIKM 2011.