

Invited Talk: Knowledge Graph Quality Management

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Abstract. This talk discusses recent research related to managing data quality for Knowledge Graphs and also some applications related to the biomedical domain. First, the talk will show how to deal with noisy labels in datasets which are used to train machine learning models. Then, the completeness dimension of knowledge graphs will be discussed. The focus will be on work aiming to estimate the expected number of instances for a class in order to measure the level of data completeness. Related to this, the talk will show how crowdsourced knowledge graphs receive contribution towards increasing completeness and how different people contribute at different levels over time. Finally, it will be demonstrated how human bias reflected in the contributed data can be represented in the knowledge graph and surfaced to users. The second part of the talk will discuss a couple of application scenarios in the biomedical domain where knowledge graph are used, including entity extraction and information access.

Speaker Bio: Dr. Gianluca Demartini is an Associate Professor in Data Science at the University of Queensland, School of Information Technology and Electrical Engineering. His main research interests are Information Retrieval, Semantic Web, and Human Computation. He received Best Paper awards at the AAAI Conference on Human Computation and Crowdsourcing (HCOMP) in 2018 and at the European Conference on Information Retrieval (ECIR) in 2016 and the Best Demo award at the International Semantic Web Conference (ISWC) in 2011. He has published more than 100 peer-reviewed scientific publications including papers at major venues such as WWW, ACM SIGIR, VLDBJ, ISWC, and ACM CHI. He has given several invited talks, tutorials, and keynotes at a number of academic conferences (e.g., ISWC, ICWSM, WebScience, and the RuSSIR Summer School), companies (e.g., Facebook), and Dagstuhl seminars. He is an ACM Distinguished Speaker since 2015. He serves as co-editor in chief for the Human Computation Journal, area editor for the Journal of Web Semantics, editorial board member for the Information Retrieval journal, and as Crowdsourcing and Human Computation Track co-Chair at WWW 2018. He has

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been Program Committee member for several conferences including WWW, SIGIR, KDD, AAI, IJCAI, ISWC, and ICWSM. Before joining the University of Queensland, he was Lecturer at the University of Sheffield in UK, post-doctoral researcher at the eXascale Infolab at the University of Fribourg in Switzerland, visiting researcher at UC Berkeley, junior researcher at the L3S Research Center in Germany, and intern at Yahoo! Research in Spain. In 2011, he obtained a Ph.D. in Computer Science at the Leibniz University of Hanover focusing on Semantic Search.