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# ACM Journal of Data and Information Quality

*Special Issue on Quality Assessment of Knowledge Graphs*

**Guest editors**

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**Context**

The information in Knowledge Graphs (KGs) comes in large quantities (*volume*), from heterogeneous sources and in various format (*variety*), quickly evolves over time (*velocity*) and may be inconsistent (*veracity*) or indicate other quality problems. In particular, several recent studies report that existing knowledge graphs indicate significant differences with respect to the quality of information they contain.

Despite the quality of knowledge graphs being an essential concept for a variety of real-world applications, few efforts are currently available to standardize how quality tracking and assurance of knowledge graphs should be implemented. For traditional databases, numerous assessment methods have been proposed, which focused on the definition and modeling of several data quality dimensions (or criteria), such as data completeness, accuracy, timeliness, consistency or absence of duplicates. For the KGs new algorithms and metrics have to be designed, in particular, in order to deal with novel requirements related to the variety, volume and velocity issues. The new algorithms and metrics should consider the differences of the structural characteristics between traditional databases and KGs. Understanding and managing the evolution of quality dimensions, methods and techniques needed to assess quality in KGs is a challenge that needs to be addressed. Moreover, none of the current approaches use the assessment to ultimately improve the quality in the long run.

Knowledge graph profiling, i.e. extraction of metadata describing knowledge graph characteristics, is of increasing importance in this context. Profiling can support efficient quality assessment especially for large-scale knowledge graphs, definition of quality rules in particular domains and generation of data summaries. Of particular interest are the profiling methods in the novel application domains, including, for example, knowledge graphs that contain geographical, temporal, event-centric and multilingual information as well as application of knowledge graphs in the domain of machine learning.

This Special Issue is addressed to those members of the community interested in providing novel methodologies or scalable frameworks in assessing, monitoring, maintaining and improving the quality of as well as profiling of knowledge graphs and also introduce efficient tools, access methods and user interfaces that can effectively assist in these processes. The benefits of such methodologies will not only help in detecting inherent quality problems currently plaguing knowledge graphs, and make these characteristics more transparent to applications and users, but also provide the means to fix these problems and maintain the quality in the long run.

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**Topics -** The topics of interest of this special issue include:

- Knowledge Graph profile representation
- Knowledge Graph profiling approaches
- Profiling KGs containing geographical, temporal and event-centric information
- Profiling multilingual Knowledge Graphs
- Profiling Knowledge Graphs for machine learning applications
- Adoption of Knowledge Graph profiles in question answering and data search
- Novel applications of Knowledge Graph profiles
- Data quality assessment frameworks for Knowledge Graphs
- Evaluation of data quality and trustworthiness
- Large-scale quality assessment of structured datasets
- Validation of currently existing data quality assessment methodologies
- Use-case driven quality assessment
- Design and implementation of data quality monitoring, assessment and improvement tools
- Quality exploration and analysis interfaces
- Scalability and performance of quality assessment tools
- Crowdsourcing quality assessment/improvement

**Expected contributions -** We welcome two types of research contributions:

- Research manuscripts reporting novel methodologies and results (up to 25 pages).
- Experience papers that report on lessons learned from addressing specific issues within the scope of the call. These papers should be of interest to the broad data quality community (10+ pages plus an optional appendix).

**Format**

- JDIQ welcomes manuscripts that extend prior published work, provided they contain at least 30% new material, and that the significant new contributions are clearly identified in the introduction.
- Submission guidelines with Latex (preferred) or Word templates are available here: **http://jdiq.acm.org/authors.cfm#subm**
- Please submit the paper by selecting as type of submission: "SI: Quality Assessment of Knowledge Graphs"

**Important dates and timeline**

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| Initial submission: | March 24, 2019 (Extended Deadline) |
| First review: | June 3, 2019 |
| Revised manuscripts: | August 3, 2019 |
| Second review: | October 3, 2019 |
| Camera-ready manuscripts: | December 3, 2019 |
| Publication: | February 2020 |

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