Resources for Graph Data and Knowledge

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Abstract

In this Special Issue of Transactions on Graph Data and Knowledge – entitled "Resources for Graph Data and Knowledge" – we present eight articles that describe key resources in the area. These resources cover a wide range of topics within the scope of the journal, including graph querying, graph learning, information extraction, and ontologies, addressing applications of knowledge graphs involving art, bibliographical metadata, research reproducibility, and transport networks.

2012 ACM Subject Classification Computing methodologies → Knowledge representation and reasoning; Information systems → Semantic web description languages; Information systems → Graph-based database models; Computing methodologies → Machine learning; Theory of computation → Graph algorithms analysis; Mathematics of computing → Graph theory

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Category Preface

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Special Issue Resources for Graph Data and Knowledge

1 Resources Articles

Resources play an essential role in many areas of computer science research, including in the area of Graph Data & Knowledge. Such resources may involve benchmarks, datasets, engines, frameworks, interfaces, knowledge graphs, languages, ontologies, pre-trained models, software libraries, standards, tools, user logs, web applications and services, etc. High-quality resources along these lines offer significant value to the community, facilitating rapid prototyping of novel applications and tools; experimentation over real-world datasets, ontologies, queries, etc.; transitioning novel research findings into practice; etc. Despite the advances that such resources can enable within a particular research community, and the amount of effort required in designing, building, and maintaining them, they can often be undervalued in an academic setting.

In this context, Transactions on Graph Data & Knowledge (TGDK) has introduced a new submission type for Resource Articles that describe two types of resources relevant to research on Graph Data & Knowledge:

- *Mature resources* that have already enjoyed significant adoption by third parties, or that complement resources with significant adoption. Such adoption may be in, for example, the context of research, industry or a specific user community.
- *Emerging resources* that may have only recently been made available, but that provide novel scientific results. An example of such a resource could be, for example, a bespoke benchmark that provides novel insights into the performance of state-of-the-art tools on a specific task.

Resource Articles include discussion of the motivation for the resource and its novelty, a technical description of the resource, relevance to the journal, key statistics or other metadata underlying the resource and its adoption, how the resource is made available, how the sustainability of the resource is assured, an assessment of the limitations of the resource, and future directions for the resource. Mature resources must further discuss the impact of the resource, while emerging resources must present a scientific contribution enabled by the resource. Such submissions are then peer-reviewed with respect to six criteria: novelty, relevance, clarity, technical soundness, impact, and resource quality. In the case of novelty, the emphasis is put on the novelty of the resource itself in the context of related resources rather than expecting novelty in a research sense.

This new submission type was inaugurated via the current Special Issue, entitled "Resources for Graph Data & Knowledge" (described below). Based on the success of this Special Issue, the Editors-in-Chief now solicit Resource Articles as part of the regular call for submissions.

2 Resources for Graph Data & Knowledge

As the Editors-in-Chief, we are pleased to present the TGDK Special Issue titled "Resources for Graph Data & Knowledge", which is the second issue of the second volume of the journal, and the third issue overall since the inauguration of the journal. This Special Issue presents a collection of eight Resource Articles. The resources covered by the Special Issue reflect the broad applicability of graphs for representing data and knowledge. The resources themselves cover various sub-topics relevant for TGDK that include graph querying, graph learning, information extraction and knowledge representation, covering also applications relating to art, bibliographical metadata, research reproducibility, and transport networks.

Though the call for this Special Issue is now over, based on its success, we have opted to include Resource Articles in the regular call for the journal. Hence we invite the reader who may be an author, creator and/or maintainer of high-quality resources in the area to consider submitting a description of their artefact(s) to the journal!