

KG4SE 2020: First International Workshop on Knowledge

Graph for Software Engineering

co-located with ICSE 2020 (23-29 May 2020, Seoul, South Korea)

<http://bigcode.fudan.edu.cn/events/KG4SE2020/>

Call for Paper

Background

Recent years have witnessed significant progress in the area of knowledge graphs, since Google coined the term in 2012. The concept of knowledge graph evolved from ontology and semantic web, but different from these previous expert-created knowledge bases, knowledge graphs are constructed from big data, using open information extraction methods. In addition to general domains, knowledge graphs have been constructed for the finance, e-commerce and health domains, and have become an enabling technology for many emergent intelligent applications in these domains.

Knowledge graphs and their applications are rather new concepts to the software engineering community. While some recent applications have demonstrated the great potential of knowledge graph methods for software engineering, there are still many open questions in software-specific knowledge graph construction, knowledge fusion, knowledge representation learning, and knowledge reasoning and applications. To answer these questions, there are many different aspects that need to be considered and integrated, within software engineering and beyond, such as natural language processing, formal methods, data mining, etc.

Goals and Outcomes

The First Workshop on Knowledge Graph for Software Engineering (KG4SE) will help bring to light the potential of knowledge graph in software engineering and a future agenda of challenges that may face the use of knowledge graph in software engineering. Specifically, KG4SE's main goals are three-fold:

- Bring together researchers and practitioners at a common venue so they can share experiences and challenges related to the adoption of knowledge graph in software engineering;
- Map out an agenda of challenges and opportunities in the area of using knowledge graph in software engineering;
- Share expertise and datasets to bootstrap newcomers to the topic and initiate a common data platform for future collaboration.

Scope and Format

We envision discussions on two main types of issues: 1) issues related to fundamental open information extraction techniques for software-specific knowledge graph; and 2) issues related to novel applications of knowledge graph in a software engineering context. Examples of these issues are: challenges for extracting knowledge from informal software text, knowledge fusion from heterogeneous information sources (e.g., API, security, system configuration, general computing knowledge), integration of knowledge graph in software development environments and software engineering processes, and the human aspects of adopting knowledge graph in software teams.

We invite submissions on new and innovative research ideas and results and industrial practices that deal with all aspects of the construction and application of knowledge graph for software engineering, including, but not limited to, the following topics of interest:

- Construction of Knowledge Graph for Software Engineering Artifacts and Issues (e.g., Requirements, Design, APIs, Libraries, Faults, Vulnerabilities)
- Concept and Relation Extraction from Software Engineering Artifacts
- Fusion of Software Engineering Concepts and Relations from Different Knowledge Sources
- Reasoning about Software Engineering Knowledge
- Knowledge Graph based Document Retrieval and Question Answering
- Knowledge Graph based Program Comprehension and Code Retrieval
- Knowledge Graph based Recommendations for Software Engineering Tasks
- Knowledge Graph based Software Operation and Management

Submission and Publication

We accept two types of submissions: long paper and short paper.

- A long paper is expected to report (relatively) mature methods, techniques, results, or a combination of these, which are broadly related to knowledge graph for software engineering. A long paper can have up to 6 pages for main content, plus 2 pages for references.
- A short paper is expected to report emergent results and/or new ideas. We particularly encourage submission of tool prototypes, data showcases, industrial experience report for short papers. However, we are open to all other types of academic and industrial contributions. A short paper can have up to 2 pages (including references).

All submissions must be formatted according to the [ACM formatting instructions](#).

Submissions can be made via EasyChair at: <https://easychair.org/conferences/?conf=kg4se2020>

The workshop proceedings will be prepared by IEEE CPS and published by ACM. The official publication date of the workshop proceedings is the date the proceedings are made available in the ACM Library. This date may be up to two weeks prior to the first day of ICSE 2020. The official publication date affects the deadline for any patent filings related to published work.

Important Dates

Paper Submissions Due: January 22, 2020

Notification to Authors: February 25, 2020

Camera-Ready Copies Due: March 16, 2020

Workshop: TBD (May 24, 25, or 26, 2020)

Organization Committee

Zhenchang Xing, Australian National University, Australia

Xin Peng, Fudan University, China

Andrian Marcus, The University of Texas at Dallas, USA

Christoph Treude, University of Adelaide, Australia

Xin Xia, Monash University, Australia

Program Committee

TBA