ABSTRACT

Graphs are data model abstractions that are becoming pervasive in several real-life applications and practical use cases. In these settings, users primarily focus on entities and their relationships, further enhanced with multiple labels and properties to form the so-called property graphs. The processing of property graphs relies on graph queries that are used to extract and manipulate entities and relationships [2]. Whereas property graphs can be defined in a schema-less fashion, schema constraints and schema concepts are important assets when considering complex graph processing [1, 3, 6]. As witnessed by ongoing standardization activities for property graphs and their query language [5], graph processing systems are prone to enable query-driven, schema-driven or constraint-driven tasks. In this talk, I will focus on our work on graph processing in the static and streaming environments [7, 9], as well as schema inference methods [6], graph constraint and query workload designs tailored for property graphs [1, 4]. I will conclude by pinpointing future directions for graph processing and graph analytics inspired by our recent community-wide vision paper [8].

CCS CONCEPTS

• Information systems → Data management systems; Database management system engines.

KEYWORDS

graph processing, property graphs, graph queries, regular path queries, graph schema, graph constraints, graph streaming, graph analytics

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