

Data Management for Emerging Problems in Large Networks

- ✓ **Big-Graphs: Querying, Mining, Streaming, Uncertainty, Systems, and Beyond**
- ✓ **User-friendly, efficient, and approximate querying and pattern mining using scalable algorithms, machine learning techniques, and distributed systems**

Knowledge-Graph Search

[SIGMOD 11, VLDB 13, ICDE 12 Tutorial, ACM SIGMOD Blog Post, Encyclopaedia of Big Data Technologies, ICDE 20, 22, KBS 22, CIKM 22, SIGMOD Record 23]

Graph Query-By-Example

[ICDE 14, TKDE 15]

Graph Stream Summarization and Query

[SNAM 17]

Spatial/ Road Network Query

[TKDE 20, SIGMOD 20]

Scalable, Approximate
Graph Querying

Reliability and Shortest Path

[EDBT 14, VLDB 15 Tutorial, TKDE 18, 20, Book @Morgan&Claypool, VLDB 19, VLDB 21, TKDE 22, DSAA 24]

Influence Maximization and Embedding

[SDM 11, ICDE 16, CIKM 17, ICDE 18, SIGMOD 18, ICDE 23, VLDB Journal 25]

Densest subgraph

[ICDE 23]

Uncertain Graph
Processing

Novel Pattern Mining

[SIGMOD 10, VLDB 20]

Graph Anomaly Detection

[CIKM 12]

Graph-based Entity Resolution

[CIKM 17, VLDB 18]

Graph Summary, Core Decomposition, Multi-layer graph, and Hypergraph

[SIGMOD 19, VLDB 17 Tutorial, TKDD 22, VLDB 23]

Complex Graph Mining

Information-centric Distributed Graph Embedding

[VLDB 23, TKDE 24]

Complementary Graph Partitioning

[SIGMOD 12]

Graph Storage Decoupling and Smart Query Routing

[USENIX ATC 18]

Vertex-Centric Graph Processing

[VLDB 14 Tutorial, EDBT 17]

Distributed Graph
Systems

Graph Neural Network Explainability

[BigData 20, DSAA Tutorial 23, SIGMOD 24, ICDE 24, KDD 25, SIGMOD Record 25]

Graph Machine Learning

Large Language Models

[ICLR 25, EDBT 25, ACM SIGMOD Blog Post, EMNLP25, SIGMOD 26]

Relational Data

[SIGMOD 14]

Stream Data

[SIGMOD 16]

Blockchain Network

[WebConf 20, 21, WSDM 22, CIKM 22 Tutorial, ACM DLT 25]

Crowd-Sourcing

[CIKM 17, VLDB 18]

Other Big Data Processing