

# Jiaxin Jiang

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## Education and Working Experience

- 2011-2015 **B.E.**, *TaiShan College, Shandong University (SDU)*, Shandong, China  
Major in Computer Science and Technology; Major GPA: 86.82/100 Ranking: 4/180
- 2015-2016 **RA**, *DB group*, Department of Computer Science, Hong Kong Baptist University
- 2016-2020 **PhD**, *DB group*, Department of Computer Science, Hong Kong Baptist University
- 2020.10-2021.09 **Postdoc**, *DB group*, Department of Computer Science, Hong Kong Baptist University
- 2021.09-Present **Research fellow**, *Grab-NUS AI Lab*, IDS, National University of Singapore

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## Experience

- 2019-2020 **Keyword search on distributed graphs, HKBU**  
In this project, our aim is to propose DKWS to support the search for keywords in distributed graphs. We observe that the workload of the computing nodes in the cluster is unbalanced. Our framework addresses this problem by adjusting the workload on runtime. To reduce communication cost, we replicate the data for each computing node.
- 2018-2019 **Efficient algorithms for public-private graphs, HKBU**  
In this project, we have proposed PPKWS to support efficient keyword searches on the public-private graph model. We show that some popular keyword search algorithms can be implemented on PPKWS with minor changes. We have verified that PPKWS significantly reduces the runtimes of the keyword searches.
- 2017-2018 **BiG-index: Generic ontology framework for indexing keyword search, HKBU**  
In this paper, we exploit ontology information associated with a knowledge graph, to semantically index the graph for efficient keyword search. The major feature of BiG-index is that it is generic enough to optimize existing algorithms for keyword search.
- 2015-2017 **Distributed graph computations, Joint work with the University of Edinburgh**  
In the paper, we suggested a model that is capable of parallelising existing sequential graph algorithms as a whole, without the need for recasting the entire algorithms into distributed models. This work mainly uses C++ and nodejs.
- 2014-2015 **Privacy-Preserving Reachability Query Services for Massive Networks, HKBU**  
Confidentiality and Integrity of data are crucial security issues for massive networks query services. We designed privacy-preserving graph query services, to support reachability query and protect the security of users' data.

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## Honors

- 2017 **ACM SIGMOD 2017 Best Paper Award**. Joint work with the University of Edinburgh.
- 2017 **VLDB 2017 Best Demo Award**. Joint work with the University of Edinburgh.
- 2017 **ACM SIGMOD Research Highlight Award**. Joint work with the University of Edinburgh.
- 2020 **Research Performance Award**. Department of Computer Science, HKBU.
- 2016-2020 **4-year PhD Studentship**. HKBU.
- 2016-2019 **Excellent Teaching Assistant Performance Award (3 times), Teaching Assistant Performance Award (2 times)**. Department of Computer Science, HKBU.

- 2014 **National College Mathematical Contest in Modeling(MCM/ICM) Honorable Mention.** Department of Computer Science, SDU.

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## Publications

- 2022 Xuankun Liao, Qing Liu, **Jiaxin Jiang**, Xin Huang, Jianliang Xu, and Byron Choi: Distributed D-core Decomposition over Large Directed Graphs, VLDB 2022.
- 2021 **Jiaxin Jiang**, Byron Choi, Jianliang Xu, and Sourav S Bhowmick: A Generic Ontology Framework for Indexing Keyword Search on Massive Graphs (Extended Abstract), ICDE 2021.
- 2021 Lyu Xu, **Jiaxin Jiang**, Byron Choi, Jianliang Xu, and Sourav S Bhowmick: Privacy Preserving Strong Simulation Queries on Large Graphs, ICDE 2021.
- 2021 Xuliang Zhu, Xin Huang, Byron Choi, **Jiaxin Jiang**, Zhaonian Zou, and Jianliang Xu: Budget Constrained Interactive Search for Multiple Targets, VLDB 2021.
- 2020 **Jiaxin Jiang**, Xin Huang, Byron Choi, Jianliang Xu, Sourav S Bhowmick, and Lyu Xu: PPKWS: An Efficient Framework for Keyword Search on Public-Private Networks, ICDE 2020.
- 2019 **Jiaxin Jiang**, Byron Choi, Jianliang Xu, and Sourav S Bhowmick: A Generic Ontology Framework for Indexing Keyword Search on Massive Graphs, TKDE 2019.
- 2018 Xin Huang, **Jiaxin Jiang**, Byron Choi, Jianliang Xu, Zhiwei Zhang, and Yunya Song: PP-DBLP: real-world datasets of public-private collaboration networks on DBLP, ICDM 2018.
- 2017 Wenfei Fan, Yinghui Wu, Jingbo Xu, Wenyuan Yu, **Jiaxin Jiang**, Zeyu Zheng, Bohan Zhang, Yang Cao, and Chao Tian: Parallelizing Sequential Graph Computations. SIGMOD 2017.
- 2017 Wenfei Fan, Jingbo Xu, Yinghui Wu, Wenyuan Yu, and **Jiaxin Jiang**. GRAPE: Parallelizing Sequential Graph Computations. VLDB 2017.
- 2017 Wenfei Fan, Yang Cao, Jingbo Xu, Wenyuan Yu, Yinghui Wu, Chao Tian, **Jiaxin Jiang**, and Bohan Zhang: From Think Parallel to Think Sequential. SIGMOD Record, 2018.
- 2016 **Jiaxin Jiang**, Peipei Yi, Byron Choi, Zhiwei Zhang, and Xiaohui Yu: Privacy-Preserving Reachability Query Services for Massive Networks. CIKM 2016.

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## Under review

- 2023 Yuan Li, Wenxue Cheng, Zhixiong Niu, Peng Cheng, Yongqiang Xiong, **Jiaxin Jiang**, Bryan Hooi, Bingsheng He: Webmeasure: An Open Network Measurement Platform on a Real-world Wide Area Network. (submitted to HOTNETS 2022).

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## Under revision

- 2022 **Jiaxin Jiang**, Byron Choi, Xin Huang, Jianliang Xu, and Sourav S Bhowmick: DKWS: An Efficient Distributed System for Keyword Search on Massive Graphs. (submitted to VLDBJ 2022).
- 2023 **Jiaxin Jiang**, Yuan Li, Bingsheng He, Bryan Hooi, Jia Chen and Johan Kok Zhi Kang: Spade: A Real-Time Fraud Detection Framework on Evolving Graphs. (submitted to VLDB 2023).

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## Academic Services

**PC member:** CIKM 2022, CIKM 2021, PAKDD 2022, PAKDD 2021, MUST 2020

**Reviewer:** TKDE 2021, TKDE 2020, CSUR2022, CSUR2021, DKE2022

**External reviewer:** SIGMOD, VLDB, ICDE, EDBT

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## Conference Presentations, Implementation and Datasets

- 2022 Spade: A Real-Time Fraud Detection Framework on Evolving Graphs. Available at: <https://github.com/samjx/Spade>.
- 2020 PPKWS: An Efficient Framework for Keyword Search on Public-Private Networks. Dallas, Texas USA, ICDE 2020, 22 April. Available at: [https://www.comp.hkbu.edu.hk/~jxjian/694\\_ICDE\\_Jiang.mp4](https://www.comp.hkbu.edu.hk/~jxjian/694_ICDE_Jiang.mp4)
- 2018 PP-DBLP: Real-world datasets of public-private collaboration networks on DBLP. Available at: <https://github.com/samjx/pp-data>.
- 2016 Privacy-Preserving Reachability Query Services for Massive Networks. Indianapolis, USA, CIKM 2016, October 24.

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## Research Interests

**1) Distributed graph database systems 2) big data analytics, and 3) Fraud detection.**

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## Teaching

- 2017 COMP7810/COMP4096 Business Intelligence
- 2017-2019 COMP4007 Software Design, Development
- 2019 COMP4007 Software Engineering

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## Hobbies

Badminton, Jogging, Reading, Coding, Chinese Chess

I won "Shandong University Cup" in 2013. ⇒ <https://rb.gy/nhpy6n>

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## Technical Skills

★★★★★ Java,  $\LaTeX$ , Scala, Spark, and GraphX

★★★★☆ C/C++, Python, Hadoop, and Giraph