Dr. Shixun Huang

Tel: (+61)0466575540
Email: shixun.huang@rmit.edu.com
Google Scholar: home page
Personal website: shixunh.io

Education

RMIT University — Melbourne, Australia
Doctor of Philosophy. — *Aug. 2017 – June 2021*

University of Melbourne — Melbourne, Australia
Master of Information Technology — *July 2015 – July 2017*

Nanjing University — Nanjing, China
Bachelor of Software Engineering — *Sept. 2011 – June 2015*

Working Experience

Research Fellow at RMIT University — Oct. 2021 – Now
Research on efficient and effective graph algorithms

Research Intern at Tencent — May. 2021 – Aug. 2021
Research on influence maximization in closed social networks

Visiting Scholar at Tsinghua University — Oct. 2020 – Feb. 2021
Research on influencer pricing in viral marketing

Visiting Scholar at Singapore Management University — Aug. 2019 – Feb. 2020
Research on high-order graph clustering

Intern at SAP — July 2014 – Feb. 2015
Sybase system maintenance and management

Publications ("#" indicates co-first authors)

Shixun Huang, Wenqing Lin, Zhifeng Bao, and Jiachen Sun. "Influence Maximization in Real-World Closed Social Networks." To appear in the 49th International Conference on Very Large Data Bases (**VLDB**), 2023. (**CORE A***)

Tingting Wang#, **Shixun Huang#**, Zhifeng Bao, J. Shane Culpepper, and Reza Arablouei. "Representative Routes Discovery From Massive Trajectories." The 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**SIGKDD**), pp. 4059-4069, 2022. (**CORE A***)

Xiaoyu Zhang, **Shixun Huang**, Zhifeng Bao, and Hai Dong. "Edge Node Placement with Minimum Costs: When User Tolerance on Service Delay Matters." The 19th Springer International Conference on Service Oriented Computing (**ICSOC**), pp. 765-772, 2021. (**CORE A**)

Shixun Huang, Yuchen Li, Zhifeng Bao, and Zhao Li. "Towards Efficient Motif-based Graph Partitioning: An Adaptive Sampling Approach." The 37th International Conference on Data Engineering (**ICDE**), pp. 528-539, 2021. (**CORE A***)

Shixun Huang, Zhifeng Bao, Guoliang Li, Yanghao Zhou, and J. Shane Culpepper. "Temporal Network Representation Learning via Historical Neighborhoods Aggregation." The 36th IEEE International Conference on Data Engineering (**ICDE**), pp. 1117-1128, 2020. (**CORE A***)

Shixun Huang, Zhifeng Bao, J. Shane Culpepper, and Bang Zhang. "Finding Temporal Influential Users over Evolving Social Networks." The 35th IEEE International Conference on Data Engineering (**ICDE**), pp. 398-409, 2019. (**CORE A***)

Shixun Huang, Zhifeng Bao, J. Shane Culpepper, Bang Zhang, and Ping Zhang. "A Linear-time Algorithm for Finding Induced Planar Subgraphs." The 17th Symposium on Experimental Algorithms (**SEA**), pp. 23:1-23:15, 2018. (**CORE B**)

Sheng Wang, Zhifeng Bao, **Shixun Huang**, and Rui Zhang. "A Unified Processing Paradigm for Interactive Location-based Web Search." The 11th ACM International Conference on Web Search and Data Mining (**WSDM**), pp. 601-609, 2018. (**CORE A***)

Teaching Experience

Teaching Assistant in Big Data Management — Semester 1, RMIT University, 2018, 2019, 2020 and 2022

Guest Lecturer in Big Data Management — Semester 1, RMIT University, 2022

Mentoring Experience

Yanghao Zhou (visiting master student from Nanjing University of Aeronautics and Astronautics)

Xiaoyu Zhang, Hai Lan and Tingting Wang (PhD students at RMIT).

Professional Services

Program Committee Member: ACM KDD 2022, ACM WSDM 2022, ACM CIKM (2022 and 2021).

Journal Reviewer: The ACM Transactions on Information Systems (TOIS), 2019.

Awards & Scholarship

College Top Course Award ×2 — RMIT University, 2018 & 2022

CORE Distinguished Dissertation Award Nomination[1] — (The only from) RMIT University, 2021

Best PhD Thesis Award — School of Computing Technologies, RMIT University, 2021

HDR Outstanding Research Achievement Award — School of Computing Technologies, RMIT University, 2020

Google PhD Fellowship Nomination ×2 — RMIT University, 2019 & 2020

Data61 PhD Scholarship Top-up — CSIRO[2], 2017-2021

PhD Full Scholarship — RMIT University, 2017-2021

Best Master Thesis Nomination (mark: 98 out of 100) — University of Melbourne, 2017

Research Interests

Combinatorial Optimization in Graphs. Many real-world problems (e.g., influencers selection for advertising, friend recommendation and edge server placement) in graphs (e.g., social networks, knowledge graphs and mobile computing networks) can be formulated as combinatorial problems. I am interested in proving the problem hardness and solving them by proposing scalable and effective approximation algorithms with theoretical guarantees.

Machine Learning in Graphs. I am interested in adopting and extending the state-of-the-arts machine learning techniques (e.g., convolution neural networks, sequence to sequence models and reinforcement learning) from other fields (e.g., NLP and CV) into graphs (e.g., social networks, sensor networks, protine-interaction and etc.), such that many notoriously hard problems (e.g., link prediction, drug discovery, user classification and product recommendation) in graphs can be effectively solved and human can get inspirations from learning models to design new algorithms.

Data Mining and Analytics in Graphs. I am excited about mining and examining (row, dirty, noisy or incomplete) graph data to derive new insights, patterns, conclusions and business opportunities. In particular, I am interested in analyzing or mining (1) how connections between nodes are formed in graphs, (2) how graphs will evolve in near future, (3) friends' impacts on online users' behaviors and preferences, (4) meaningful higher-order interaction patterns of users, and (5) important subgraph structures (e.g., motifs and planar subgraph).

References

Prof. Zhifeng Bao
School of Computing Technologies
RMIT University
+61 3 9925 1940
zhifeng.bao@rmit.edu.au

Prof. J. Shane Culpepper
School of Computing Technologies
RMIT University
+61 3 9925 5224
shane.culpepper@rmit.edu.au

[1] **https://www.core.edu.au/john-makepeace-bennett-award-australasian-distinguished-do**
[2] The Commonwealth Scientific and Industrial Research Organisation