

YALONG ZHANG

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EDUCATION

Beijing Institute of Technology

Bachelor of Science in Computer Science and Technology

Beijing, China

Sep 2021 – Jun 2025

- GPA: 90.14/100; 3.7/4.0 (rank 34 out of 320)
- Selected courses with scores: Computer Science and C++ Programming (97), Mathematical Analysis I (95), Linear Algebra A (95), University Physics A I (100), Data Structures and Algorithm Design (94)

PUBLICATIONS

1. **Yalong Zhang**, Rong-Hua Li, Qi Zhang, Jiaqi Jiang, Qiangqiang Dai, Guoren Wang. Scaling Up Density Decomposition on Massive Graphs. SIGMOD 2027
2. Jiaqi Jiang, Rong-Hua Li, **Yalong Zhang**. Density Decomposition of Multilayer Graphs. ICDE 2026
3. Qi Zhang, **Yalong Zhang**, Rong-Hua Li, Xu-Cheng Yin, Guoren Wang. Querying Historical k-Dense Subgraphs on Temporal graphs. ICDE 2026.
4. Jiaqi Jiang, Rong-Hua Li, Longlong Lin, **Yalong Zhang**, Yue Zeng, Xiaowei Ye, Guoren Wang. Pseudoarboricity-Based Skyline Important Community Search in Large Networks. IEEE Transactions on Knowledge and Data Engineering, 38, 2 (2025).
5. Qi Zhang, Rong-Hua Li, **Yalong Zhang**, Hongchao Qin, Guoren Wang. Density decomposition on large static and dynamic graphs: algorithms and applications. VLDB Journal 34, 63 (2025). (published)
6. **Yalong Zhang**, Rong-Hua Li, Longlong Lin, Qi Zhang, Lu Qin, and Guoren Wang. Integral Densest Subgraph Search on Directed Graphs. SIGMOD 2025. (published)
7. **Yalong Zhang**, Rong-Hua Li, Qi Zhang, Hongchao Qin, Lu Qin, and Guoren Wang. Density Decomposition of Bipartite Graphs. SIGMOD 2025. (published)
8. Qi Zhang, **Yalong Zhang**, Rong-Hua Li, and Guoren Wang. Approximate Anchored Densest Subgraph Search on Large Static and Dynamic Graphs. VLDB 2025. (published)
9. **Yalong Zhang**, Rong-Hua Li, Qi Zhang, Hongchao Qin, Lu Qin, and Guoren Wang. Efficient Algorithms for Pseudoarboricity Computation in Large Static and Dynamic Graphs. VLDB 2024. (published)
10. **Yalong Zhang**, Rong-Hua Li, Qi Zhang, Hongchao Qin, and Guoren Wang. Efficient Algorithms for Density Decomposition on Large Static and Dynamic Graphs. VLDB 2024. (published)

RESEARCH EXPERIENCE

University of New South Wales

Research Assistant to Dr. Dong Wen

Sydney, Australia (Remote)

Jul 2025 – Present

Graph Query Processing and Community Refinement Algorithm Design

- Formulated conductance improvement as boundary-refinement problems for noisy graph-query results.
- Designed efficient algorithms for graph query processing on large-scale graph data.
- Preparing a manuscript for submission to SIGMOD.

University of Technology Sydney

Research Assistant to Prof. Lu Qin

Sydney, Australia

Jul 2024 – Aug 2024

Bipartite Graph Mining and Density Decomposition Algorithm Design

- Proposed a hierarchical density-decomposition model for mining dense structures in bipartite graph data.
- Designed scalable network-flow and divide-and-conquer algorithms, and evaluated them on real-world datasets.
- Published this work as *Integral Densest Subgraph Search on Directed Graphs* in SIGMOD 2025.

Beijing Institute of Technology

Supervisor: Prof. Rong-Hua Li

Beijing, China

Apr 2022 – Jun 2025

Large-Scale Graph Data Management and Dense Structure Mining Algorithm Design

- Designed exact, approximation, and dynamic algorithms for density decomposition, pseudoarboricity computation, and densest-subgraph search on large static and dynamic graphs.
- Implemented the algorithms in C++ and evaluated their efficiency, scalability, and solution quality on large real-world graph datasets.
- Multiple papers were published in the SIGMOD and VLDB conferences.

AWARDS

- Beijing Natural Science Foundation Undergraduate Research Grant ('Qiyang Program') - 50,000 RMB, 2024.
- National Second Prize in the Lanqiao Cup Programming Contest 2022 and 2023.

ADDITIONAL INFORMATION

Personal website: <https://yalong-zhang.github.io/>