Yihan Sun

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Computer Science Department
Carnegie Mellon University
5000 Forbes Ave., Pittsburgh, PA, 15213

EDUCATION

Aug. 2014 – Nov. 2019, PH.D. in Computer Science, Carnegie Mellon University
· Advisor: Prof. Guy Blelloch
· Thesis: Join-based Parallel Balanced Binary Trees
· Thesis Committee: Guy E. Blelloch (chair), Andrew Pavlo, Daniel D. K. Sleator, and Michael T. Goodrich (University of California, Irvine)

Aug. 2010 – Jul. 2014, Bachelor's in Computer Science, Tsinghua University
· Overall GPA: 91.6/100. Rank: 3/135
· Best Bachelor Thesis Award
· Graduated with honors

EMPLOYMENT

From Jan. 2020, Assistant Professor at University of California – Riverside
Assistant Professor in the Department of Computer Science and Engineering

Aug. 2014 – Oct. 2019, Research Assistant at Carnegie Mellon University
Supervised by Prof. Guy Blelloch.

Jul. 2013 – Sept. 2013, Summer Research Intern at Complex Networks Lab, Department of Computer Science and Engineering, Notre Dame University
Supervised by Prof. Tijana Milenkovic.

Sept. 2012 – Aug. 2014, Research Assistant at Knowledge Engineering Lab, Computer Science Department, Tsinghua University
Supervised by Prof. Jie Tang.

Sept. 2011 – Jun. 2012, Research Assistant at Lab of Multimedia and Networking, Computer Science Department, Tsinghua University
Supervised by Prof. Peng Cui.

PUBLICATIONS

For certain papers, the authors are listed alphabetically, following the convention in mathematics and theoretical computer science, and others are listed by contribution.

You can also find my publication list on [dblp] and [Google Scholar] pages.

Conference and Journal Papers

[15] Parallelism in Randomized Incremental Algorithms
Guy E. Blelloch, Yan Gu, Julian Shun and Yihan Sun
Journal of the ACM *(JACM).* To appear.

[14] On Supporting Efficient Snapshot Isolation for Hybrid Workloads with Multi-Versioned Indexes
Yihan Sun, Guy E. Blelloch, Wan Shen Lim and Andrew Pavlo
Proceedings of the VLDB Endowment (*PVLDB*), 13(2), 2020

[13] Multiversion Concurrency with Bounded Delay and Precise Garbage Collection
Naama Ben-David, Guy E. Blelloch, Yihan Sun and Yuanhao Wei
ACM Symposium on Parallelism in Algorithms and Architectures (*SPAA*), 2019.
Also, ArXiv:1803.08617 [cs.DC]

[12] Parallel Range, Segment and Rectangle Queries with Augmented Maps
Yihan Sun and Guy E. Blelloch
Algorithm Engineering and Experiments (*ALENEX*), 2019.
Also, ArXiv:1803.08621 [cs.CG]

[11] Algorithmic Building Blocks for Asymmetric Memories
Yan Gu, Yihan Sun and Guy Blelloch
European Symposium on Algorithms (*ESA*), 2018.
Also, arXiv:1806.10370 [cs.DS]

[10] Parallel Write-efficient Algorithms and Data Structures for Computational Geometry
Guy E. Blelloch, Yan Gu, Julian Shun and Yihan Sun
ACM Symposium on Parallelism in Algorithms and Architectures (*SPAA*), 2018.
Also, arXiv:1805.05592 [cs.DS]

[9] PAM: Parallel Augmented Maps
Yihan Sun, Daniel Ferizovic and Guy Blelloch
ACM Symposium on Principles and Practice of Parallel Programming (*PPoPP*), 2018.
Also, arXiv:1612.05665 [cs.DS]

[8] Efficient Construction of Probabilistic Tree Embeddings
Guy E. Blelloch, Yan Gu and Yihan Sun
International Colloquium on Automata, Languages, and Programming (*ICALP*), 2017.
Also, arXiv:1605.04651 [cs.DS]

[7] Just Join for Parallel Ordered Sets
Guy E. Blelloch, Daniel Ferizovic and Yihan Sun
ACM Symposium on Parallelism in Algorithms and Architectures (*SPAA*), 2016.
Also, arXiv:1602.02120 [cs.DS]

[6] Parallel Shortest-paths Using Radius Stepping
Guy E. Blelloch, Yan Gu, Yihan Sun and Kanat Tangwongsan
ACM Symposium on Parallelism in Algorithms and Architectures (*SPAA*), 2016.
Also, arXiv:1602.03881 [cs.DS]

[5] Parallelism in Randomized Incremental Algorithms
Guy E. Blelloch, Yan Gu, Julian Shun and Yihan Sun
ACM Symposium on Parallelism in Algorithms and Architectures (*SPAA*), 2016.

[4] Simultaneous Optimization of Both Node and Edge Conservation in Network Alignment via WAVE
Yihan Sun, Joseph Crawford, Jie Tang and Tijana Milenkovic
Workshop on Algorithms in Bioinformatics (*WABI*), 2015.
Also, arXiv:1410.3301 [q-bio.MN]

[3] A Top-down Parallel Semisort
Yan Gu, Julian Shun, Yihan Sun and Guy E. Blelloch
ACM Symposium on Parallelism in Algorithms and Architectures (*SPAA*), 2015.

[2] Fair Evaluation of Global Network Aligners

Joseph Crawford, Yihan Sun and Tijana Milenkovic
Algorithms for Molecular Biology, 10:19.
Poster in ACM Conference on Bioinformatics, Computational Biology and Health Informatics (*BCB*), 2015.
Also, arXiv:1407.4824 [q-bio.MN]

[1] Influence Maximization in Dynamic Social Networks
Honglei Zhuang, Yihan Sun, Jie Tang, Jialin Zhang and Xiaoming Sun
IEEE International Conference on Data Mining (*ICDM*), 2013.

Tutorial

[1] Parallel and Concurrent Tree Structures
Yihan Sun and Guy E. Blelloch
Tutorial in Principles and Practice of Parallel Programming (*PPoPP*) 2019.

TALKS

Join-based Parallel Balanced Binary Trees
- Oct. 2019 Carnegie Mellon University. Thesis Oral.
- Apr. 2019. University of Connecticut
- Apr. 2019. Pennsylvania State University.
- Mar. 2019. Georgia Institute of Technology.
- Mar. 2019. University of California, Riverside.
- Mar. 2019. Michigan State University.
- Feb. 2019. Lehigh University.
- Feb. 2019. Florida State University.
- Feb. 2019. Missouri University of Science and Technology.
- Oct. 2018. Massachusetts Institute of Technology (MIT).

Parallel and Concurrent Tree Structures
- Feb. 2019. Washington, DC. Tutorial in Principles and Practice of Parallel Programming (PPoPP) 2019.

Parallel Range, Segment and Rectangle Queries with Augmented Maps
- Jan. 2019. San Diego, CA. Algorithm Engineering and Experiments (ALENEX), 2019.

On Supporting Efficient Snapshot Isolation for Hybrid Workloads with Multi-Versioned Indexes
- Nov. 2018. Carnegie Mellon University (CMU). DB seminar.

Parallel Balanced Binary Trees Using Just Join
- Mar. 2018. Goethe-University Frankfurt, Germany.
- Dec. 2017. Carnegie Mellon University (CMU). Thesis Proposal.

PAM: Parallel Augmented Maps
- Feb. 2018. Vienna, Austria. ACM Principles and Practice of Parallel Programming (PPoPP), 2018.
- Sep. 2017. Massachusetts Institute of Technology (MIT). Annual Parlay Meeting.

Just Join for Parallel Ordered Sets
- Jul. 2017. Fudan University, Shanghai, China.
- Dec. 2016. Carnegie Mellon University (CMU). Speaking Skill Talk.
- Nov. 2016. Carnegie Mellon University (CMU). Theory Lunch Talk.
- Jul. 2016. Asilomar State Beach, California, USA. ACM Symposium on Parallelism in Algorithms and Architectures (SPAA), 2016.

· Apr. 2016. Carnegie Mellon University (CMU). Annual Parlay Meeting.

A Top-down Parallel Semisort
· Jun. 2015. Portland, Oregon, USA. ACM Symposium on Parallelism in Algorithms and Architectures (SPAA), 2015.

GRANT

CCF: SMALL: Parallel Algorithms: Theory and Practice
· Participated in writing the grant proposal with Guy Blelloch, Yan Gu and Laxman Dhulipala.

AWARDS & HONORS

· Selected Participant of *Rising Stars* in EECS: An Academic Career Workshop for Women, MIT, 2018
· Graduated with Honors in Computer Science (Tsinghua Univ.), 2014
· Best Bachelor Thesis Award in Tsinghua Univ., 2014 (1st place in Computer Science)
· Outstanding Student in Beijing (2014)
· IBM Scholarship for Outstanding Students (2013)
· The Scholarship of Tung OOCL (2012)
· The Scholarship of Changhong Electric Co. Ltd. (2011)
· The Scholarship of Singapore Technologies Engineering Ltd. (2011-2013)
· The Scholarship of THTF (2010-2013)

TEACHING

Courses Teaching
· UCR CS260: *Parallel Algorithms* (Winter 2020)

Teaching Assistant
· CMU 15-451/651: *Algorithms* (Spring 2017)
· CMU 15-859: *Algorithms in the "Real World"* (Spring 2018)

Guest Lectures
· Parallel Algorithms on Balanced Binary Trees
  At CMU 15-859: *Algorithms in the "Real World"* (Spring 2018)
· A Top-down Parallel Semisort
  At MIT 6.886: *Algorithm Engineering* (Spring 2019)
· Parallel Algorithms on Balanced Binary Trees
  At MIT 6.886: *Algorithm Engineering* (Spring 2019)

SERVICES

Paper reviews
Journals:
· JEA (Journal of Experimental Algorithmics).
· TOPC (ACM Transactions on Parallel Computing)
· PARCO (Parallel Computing, Systems & Applications).
· JCST (Journal of Computer Science & Technology).
Conferences:
· IPDPS (International Parallel and Distributed Processing Symposium) 2020.
· APoCS (Algorithmic Principles of Computer Systems) 2020.

- ALENEX (Algorithm Engineering and Experiments) 2020.
- ESA (European Symposium on Algorithms) 2019.
- ICALP (International Colloquium on Automata, Languages and Programming) 2019.
- SPAA (Symposium on Parallelism in Algorithms and Architectures) 2019.
- IPDPS (International Parallel and Distributed Processing Symposium) 2019.
- SPAA (Symposium on Parallelism in Algorithms and Architectures) 2018.
- HiPC (High Performance Computing) 2016.
- Euro-Par (International European Conference on Parallel and Distributed Computing) 2016.
- FUN (Fun with Algorithms) 2016.

PC Members:

- ALENEX (Algorithm Engineering and Experiments), 2020.
- SPAA (Symposium on Parallelism in Algorithms and Architectures), 2020.