

## 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

### **Jan. 2020 - Present, 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.*

## 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

#### **[17] Randomized Incremental Convex Hull is Highly Parallel**

Guy E. Blelloch, Yan Gu, Julian Shun and Yihan Sun

ACM Symposium on Parallelism in Algorithms and Architectures (SPAA), 2020.

#### **[16] Optimal (Randomized) Parallel Algorithms in the Binary-Forking Model**

Guy E. Blelloch, Jeremy Fineman, Yan Gu, and Yihan Sun

ACM Symposium on Parallelism in Algorithms and Architectures (SPAA), 2020.

**Best paper nomination.**

#### **[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 E. 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 E. 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

### [2] Implementing Parallel Tree Structure in Shared-memory

Yihan Sun

Tutorial in ACM Symposium on Parallelism in Algorithms and Architectures (*SPAA*), 2020.

### [1] Parallel and Concurrent Tree Structures

Yihan Sun and Guy E. Blelloch

Tutorial in Principles and Practice of Parallel Programming (*PPoPP*), 2019.

## TALKS

### Implementing Parallel Tree Structure in Shared-Memory

- **Conference tutorial session. Jul. 2020.** Virtual. ACM Symposium on Parallelism in Algorithms and Architectures (*SPAA*), 2020.

### Randomized Incremental Convex Hull is Highly Parallel

- **Conference talk. Jul. 2020.** Virtual. ACM Symposium on Parallelism in Algorithms and Architectures (*SPAA*), 2020.

### Join-based Parallel Balanced Binary Trees

- **Thesis oral. Oct. 2019.** Carnegie Mellon University.
- **Invited talk. Apr. 2019.** University of Connecticut.
- **Invited talk. Apr. 2019.** Pennsylvania State University.
- **Invited talk. Mar. 2019.** Georgia Institute of Technology.
- **Invited talk. Mar. 2019.** University of California, Riverside.
- **Invited talk. Mar. 2019.** Michigan State University.
- **Invited talk. Feb. 2019.** Lehigh University.
- **Invited talk. Feb. 2019.** Florida State University.
- **Invited talk. Feb. 2019.** Missouri University of Science and Technology.
- **Invited talk. Oct. 2018.** Massachusetts Institute of Technology (MIT).

### Parallel and Concurrent Tree Structures

- **Conference tutorial session. Feb. 2019.** Washington, DC. Tutorial in Principles and Practice of Parallel Programming (*PPoPP*) 2019.

### Parallel Range, Segment and Rectangle Queries with Augmented Maps

- **Conference talk. Jan. 2019.** San Diego, CA. Algorithm Engineering and Experiments (*ALENEX*), 2019.

### On Supporting Efficient Snapshot Isolation for Hybrid Workloads with Multi-Versioned Indexes

- **Invited talk. Nov. 2018.** Carnegie Mellon University (CMU). DB seminar.

### Parallel Balanced Binary Trees Using Just Join

- **Invited talk. Mar. 2018.** Goethe-University Frankfurt, Germany.
- **Thesis Proposal. Dec. 2017.** Carnegie Mellon University (CMU).

## PAM: Parallel Augmented Maps

- **Conference talk. 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

- **Invited talk. Jul. 2017.** Fudan University, Shanghai, China.
- **Dec. 2016.** Carnegie Mellon University (CMU). Speaking Skill Talk.
- **Nov. 2016.** Carnegie Mellon University (CMU). Theory Lunch Talk.
- **Conference 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

- **Conference talk.** 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

- **Best paper nomination.** Optimal (Randomized) Parallel Algorithms in the Binary-Forking Model. Guy E. Blelloch, Jeremy Fineman, Yan Gu, and Yihan Sun. ACM Symposium on Parallelism in Algorithms and Architectures (SPAA), 2020.
- 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 (1<sup>st</sup> 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)
- UCR CS141: *Intermediate Data Structures and Algorithms* (Fall 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).
- Computational Social Networks

Conferences:

- SODA (ACM-SIAM Symposium on Discrete Algorithms) 2021
- HiPC (High Performance Computing) 2020.
- ESA (European Symposium on Algorithms) 2020.
- SPAA (Symposium on Parallelism in Algorithms and Architectures) 2020.
- 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.
- ESA (European Symposium on Algorithms) Track B, 2020.
- HiPC (IEEE International Conference on High Performance Computing, Data, And Analytics) Algorithm Track, 2020.

Last updated: 2020/08/02