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Computer Science and Engineering University of California, Riverside

#### **EDUCATION**

#### Aug. 2014 - Nov. 2019, PH.D. in Computer Science, Carnegie Mellon University

- · Advisor: Prof. Guy Blelloch
- · Thesis: Join-based Parallel Balanced Binary Trees

### Aug. 2010 - Jul. 2014, Bachelor's in Computer Science, Tsinghua University

- · 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

#### **PUBLICATIONS**

For certain papers, the authors (or all but the first author) are listed alphabetically.

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

\*: UCR graduate student. \*\*: UCR undergraduate student (at the project's start time)

## [39] SPAA'24 Brief Announcement: PASGAL: Parallel And Scalable Graph Algorithm Library

Xiaojun Dong\*, Yan Gu, Yihan Sun, and Letong Wang\*

ACM Symposium on Parallelism in Algorithms and Architectures (SPAA), 2024.

#### [38] SPAA'24 Parallel and (Nearly) Work-Efficient Dynamic Programming

Xiangyun Ding\*, Yan Gu, and Yihan Sun

ACM Symposium on Parallelism in Algorithms and Architectures (SPAA), 2024.

Also, ArXiv: 2404.16314 [cs.DS]

**Outstanding Paper Award. Best Paper Finalist.** 

#### [37] EduPar'24 Teaching Parallel Algorithms Using the Binary-Forking Model

Guy Blelloch, Yan Gu, and Yihan Sun

NSF/TCPP Workshop on Parallel and Distributed Computing Education (EduPar), 2024 (@IPDPS).

#### [36] VLDB'24 Fast and Space-Efficient Parallel Algorithms for Influence Maximization

Letong Wang\*, Xiangyun Ding\*, Yan Gu, and Yihan Sun

Proceedings of the VLDB Endowment (VLDB), 2024.

Also, ArXiv: 2311.07554 [cs.DS]

#### [35] PPoPP'24 Parallel Integer Sort: Theory and Practice

Xiaojun Dong\*, Laxman Dhulipala, Yan Gu, and Yihan Sun

ACM Symposium on Principles and Practice of Parallel Programming (PPoPP), 2024.

Also, ArXiv: 2401.00710 [cs.IR]

# [34] PPoPP'24 ParlayANN: Scalable and Deterministic Parallel Graph-Based Algorithms for Approximate Nearest Neighbor Search

Magdalen Dobson, Zheqi Shen\*, Guy Blelloch, Laxman Dhulipala, Yan Gu, Harsha Simhadri, and Yihan Sun ACM Symposium on Principles and Practice of Parallel Programming (PPoPP), 2024.

Also, ArXiv: 2305.04359 [cs.DS]

## [33] ESA'23 Efficient Parallel Output-Sensitive Edit Distance

Xiangyun Ding\*, Xiaojun Dong\*, Yan Gu, Youzhe Liu\*, and Yihan Sun

European Symposium on Algorithms (ESA), 2023

Also, ArXiv:2306.17461 [cs.DS]

Best Paper Award.

## [32] SPAA'23 High-Performance and Flexible Parallel Algorithms for Semisort and Related Problems

Xiaojun Dong\*, Yunshu Wu\*, Zhongqi Wang\*, Laxman Dhulipala, Yan Gu, and Yihan Sun

ACM Symposium on Parallelism in Algorithms and Architectures (SPAA), 2023.

Also, ArXiv: 2301.01356 [cs.DS]

## [31] SPAA'23 Parallel Longest Increasing Subsequence and van Emde Boas Trees

Yan Gu, Ziyang Men\*, Zheqi Shen\*, Yihan Sun, and Zijin Wan\*

ACM Symposium on Parallelism in Algorithms and Architectures (SPAA), 2023.

Also, ArXiv:2208.09809 [cs.DS]

## [30] SIGMOD'23 Parallel Strong Connectivity Based on Faster Reachability

Letong Wang\*, Xiaojun Dong\*, Yan Gu, and Yihan Sun

Proceedings of the ACM on Management of Data (ACMMOD) 1(2), 2023 / SIGMOD 2023.

Poster in SIAM Conference on Applied and Computational Discrete Algorithms (ACDA23).

Poster in Highlights of Parallel Computing (HOPC at SPAA'23).

Also, ArXiv:2301.01356 [cs.DS]

#### [29] PPoPP'23 Provably Fast and Space-Efficient Parallel Biconnectivity

Xiaojun Dong\*, Letong Wang\*, Yan Gu, and Yihan Sun

ACM Symposium on Principles and Practice of Parallel Programming (PPoPP), 2023.

Poster in SIAM Conference on Applied and Computational Discrete Algorithms (ACDA'23).

Poster and invited talk in Highlights of Parallel Computing (HOPC at SPAA'23).

Also, arXiv:2301.01356.

**Best Paper Award.** 

## [28] SSDBM'22 Bi-directional Lot-Structured Merge Tree

Xin Zhang\*, Qizhong Mao\*, Ahmed Eldawy, Vagelis Hristidis, Yihan Sun International Conference on Scientific and Statistical Database Management (SSDBM), 2022.

## [27] SPAA'22 Parallel Cover Trees and their Applications

Yan Gu, Zachary Napier\*\*, Yihan Sun, and Letong Wang\*

ACM Symposium on Parallelism in Algorithms and Architectures (SPAA), 2022.

## [26] SPAA'22 Many Sequential Iterative Algorithms Can Be Parallel and (Nearly) Workefficient

Zheqi Shen\*, Zijin Wan\*\*, Yan Gu, and Yihan Sun

ACM Symposium on Parallelism in Algorithms and Architectures (SPAA), 2022.

Also, ArXiv:2205.13077 [cs.DS]

## [25] TOPC Joinable Parallel Balanced Binary Trees

Guy Blelloch, Daniel Ferizovic and Yihan Sun ACM Transactions on Parallel Computing (TOPC), 9, 2, Article 7 (June 2022).

## [24] PPoPP'22 POSTER: The Problem-Based Benchmark Suite (PBBS), V2

Daniel Anderson, Guy E. Blelloch, Laxman Dhulipala, Magdalen Dobson, and Yihan Sun ACM Symposium on Principles and Practice of Parallel Programming (PPoPP), 2022.

### [23] PLDI'22 PaC-trees: Supporting Parallel and Compressed Purely-Functional Collections

Laxman Dhulipala, Guy E. Blelloch, Yan Gu and Yihan Sun

ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI), 2022. Also, ArXiv:2204.06077 [cs.DS]

## [22] APOCS'22 Analysis of Work-Stealing and Parallel Cache Complexity

Yan Gu, Zachary Napier\*, and Yihan Sun

ACM-SIAM Algorithmic Principles of Computer Systems (APOCS), 2022.

## [21] SPAA'21 Efficient Stepping Algorithms and Implementations for Parallel Shortest Paths

Xiaojun Dong\*\*, Yan Gu, Yihan Sun and Yunming Zhang

ACM Symposium on Parallelism in Algorithms and Architectures (SPAA), 2021.

Also, ArXiv:2105.06145 [cs.DS]

### [20] DISC'21 Space and Time Bounded Multiversion Garbage Collection

Naama Ben-David, Guy E. Blelloch, Panagiota Fatourou, Eric Ruppert, Yihan Sun and Yuanhao Wei International Symposium on Distributed Computing (DISC), 2021.

Also: ArXiv:2108.02775 [cs.DC]

## [19] PPoPP'21 Constant-Time Snapshots with Applications to Concurrent Data Structures

Yuanhao Wei, Naama Ben-David, Guy E. Blelloch, Panagiota Fatourou, Eric Ruppert and Yihan Sun ACM Symposium on Principles and Practice of Parallel Programming (PPoPP), 2021. Also, ArXiv:2007.02372 [cs.DC]

#### [18] SPAA'20 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.

## [17] SPAA'20 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.

**Outstanding Paper Award. Best Paper Finalist.** 

#### [16] JACM Parallelism in Randomized Incremental Algorithms

Guy E. Blelloch, Yan Gu, Julian Shun and Yihan Sun Journal of the ACM (JACM).

## [15] VLDB'20 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 / VLDB 2020.

## [14] SPAA'19 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]

### [13] PPoPP'19 Parallel and Concurrent Tree Structures

Yihan Sun and Guy E. Blelloch

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

## [12] ALENEX'19 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] ESA'18 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] SPAA'18 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] PPoPP'18 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] ICALP'17 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] SPAA'16 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] SPAA'16 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] SPAA'16 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] WABI'15 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] SPAA'15 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] AMB Fair Evaluation of Global Network Aligners

Joseph Crawford, Yihan Sun and Tijana Milenkovic

Algorithms for Molecular Biology, 10:19.

 $Poster\ in\ ACM\ Conference\ on\ Bioinformatics,\ Computational\ Biology\ and\ Health\ Informatics\ (\emph{BCB}),\ 2015.$ 

Also, arXiv:1407.4824 [q-bio.MN]

## [1] ICDM'13 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.

#### **GRANTS**

#### **NSF Grants**

## AF: Small: New Directions for Parallel Data Structures (PI) NSF CISE Core Program, CCF-2103483

- · PI: Yihan Sun. Co-PI: Yan Gu (UC Riverside).
- · Program: CISE Core. Division: CCF/AF (Algorithmic Foundations)
- · Period: 07/15/2021 06/30/2025
- Total amount: \$515,749. Amount to me: \$257,874.

## III: Small: Rethinking the Data Organization and Lifecycle in LSM Storage Systems (co-PI) NSF CISE Core Program, IIS-2227669

- · PI: Evangelos Christidis (UC Riverside). Co-PI: Yihan Sun.
- · Program: CISE Core. Division: IIS/III (Information Integration and Informatics)
- · Period: 01/01/2023 12/31/2025.
- Total amount: \$600,000. Amount to me: \$300,000.

## CAREER: Parallel Algorithms: Theory for Practice (PI) NSF CAREER Award, CCF-2238358

- · PI: Yihan Sun.
- · Program: NSF CAREER. Division: CCF/AF (Algorithmic Foundations)
- · Period: 03/01/2023 03/01/2028.
- Total amount: \$546,613. Amount to me: \$546,613.

## POSE: Phase II: Open-Source Ecosystem for OpenCilk (co-PI) NSF POSE (Pathways to Open-Source Ecosystems) Program Google Research Scholar Program

- · PI: Charles Leiserson (MIT). Co-PI: Yihan Sun and John Owens (UC Davis)
- · Program: POSE (Pathways to Open-Source Ecosystems)
- · Period: 08/2024 08/2026.
- Total amount: \$1,500,000. Amount to me: \$121,000.

#### **Industry Grants**

## Efficient Parallel Algorithms for Graph Mining (co-PI) Google Research Scholar Program

- · PI: Yan Gu (UC Riverside). Co-PI: Yihan Sun.
- · Period: 04/2024 04/2025.
- Total amount: \$60,000. Amount to me: \$30,000.

#### **UCR Grants**

## Parallel Data Structures: Theory and Practice (PI) UCR Regents' Faculty Fellowships

- · PI: Yihan Sun.
- · Period: 05/07/2022 06/30/2024.
- Total amount: \$9,000. Amount to me: \$9,000.

## Simple and Efficient Parallel Algorithms (PI) UCR Regents' Faculty Development Fellowships

- · PI: Yihan Sun.
- · Period: 07/2023 07/2024.
- · Total amount: \$4,500. Amount to me: \$4,500.

#### **GRANT-PROPOSAL REVIEW PANELISTS**

- · NSF Panel in 2020
- · Two NSF Panels in 2022
- · NSF Panel in 2024

#### **AWARDS & HONORS**

- · Google Research Scholar Award, 2024. Yan Gu and Yihan Sun. Efficient Parallel Algorithms for Graph Mining.
- **Outstanding Paper Award, 2024.** Xiangyun Ding, Yan Gu, and Yihan Sun. Parallel and (Nearly) Work-Efficient Dynamic Programming. ACM Symposium on Parallelism in Algorithms and Architectures (SPAA), 2024.
- · NSF CAREER Award, 2023. Yihan Sun. Parallel Algorithms: Theory for Practice.
- **Best Paper Award, 2023.** Xiangyun Ding, Xiaojun Dong, Yan Gu, Youzhe Liu, and Yihan Sun. Efficient Parallel Output-Sensitive Edit Distance. European Symposium on Algorithms (ESA), 2023.
- **Best Paper Award, 2023.** Xiaojun Dong, Letong Wang, Yan Gu, and Yihan Sun. Provably Fast and Space-Efficient Parallel Biconnectivity. ACM Symposium on Principles and Practice of Parallel Programming (PPoPP), 2023.
- **Outstanding Paper Award, 2020.** Guy E. Blelloch, Jeremy Fineman, Yan Gu, and Yihan Sun. Optimal (Randomized) Parallel Algorithms in the Binary-Forking Model. 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 University), 2014
- · Best Bachelor Thesis Award in Tsinghua University, 2014
- · Outstanding Student in Beijing, 2014.

#### **SELECTED TALKS**

#### **Tutorials**

#### **Implementing Parallel Tree Structures in Shared-memory**

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

#### **Parallel and Concurrent Tree Structures**

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

#### **Invited / Seminar Talks**

#### Scalable Parallel Algorithms: Theory and Practice

- · Google. Algorithm Seminar. April 2024. New York City, NY.
- · Stony Brook University. April 2024. Stony Brook, NY.

#### **Provably Fast and Space-Efficient Parallel Biconnectivity**

· UC Riverside. April 2024. Riverside, CA.

#### Parallel Longest Increasing Subsequence and van Emde Boas Trees

· Dagstuhl Seminar. May 2023. Dagstuhl, Germany.

#### Parallelize Sequential Iterative Algorithms and the Longest Increasing Subsequence

· UC Riverside. Interdisciplinary Center for Quantitative Modeling in Biology (ICQMB). Dec. 2022. Riverside, CA.

#### **Parallelizing Sequential Iterative Algorithms**

· Carnegie Mellon University. Blelloch Fest. Oct. 2022. Pittsburgh, PA.

#### Efficient Stepping Algorithms and Implementations for Parallel Shortest Paths

· Dagstuhl Seminar. Mar. 2021. Virtual.

#### Join-based Parallel Balanced Binary Trees

- · Carnegie Mellon University (CMU). Thesis oral. Oct. 2019. Pittsburgh, PA.
- · University of Connecticut. Apr. 2019. Storrs, CT.
- · Pennsylvania State University. Apr. 2019.
- · Georgia Institute of Technology. Mar. 2019.
- · UC Riverside. Mar. 2019. Riverside, CA.
- · Michigan State University. Mar. 2019. East Lansing, MI.
- · Lehigh University. Feb. 2019. Bethlehem, PA.
- · Florida State University. Feb. 2019. Tallahassee, FL.
- Missouri University of Science and Technology. Feb. 2019. Rolla, MO.
- · Massachusetts Institute of Technology (MIT). Oct. 2018. Cambridge, MA.

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

· Carnegie Mellon University (CMU). DB seminar. Nov. 2018. Pittsburgh, PA.

#### Parallel Balanced Binary Trees Using Just Join

- · Goethe-University Frankfurt . Mar. 2018. Frankfurt, Germany.
- · Carnegie Mellon University (CMU). Thesis Proposal. Dec. 2017. Pittsburgh, PA.

#### **PAM: Parallel Augmented Maps**

· Massachusetts Institute of Technology (MIT). Annual Parlay Meeting. Sep. 2017. Cambridge, MA.

#### Just Join for Parallel Ordered Sets

- · Fudan University. Jul. 2017. Shanghai, China.
- · Carnegie Mellon University (CMU). Speaking Skill Talk. Dec. 2016. Pittsburgh, PA.
- · Carnegie Mellon University (CMU). Theory Lunch Talk. Nov. 2016. Pittsburgh, PA.
- · Carnegie Mellon University (CMU). Annual Parlay Meeting. Apr. 2016. Pittsburgh, PA.

#### **Conference Talks**

### PaC-trees: Supporting Parallel and Compressed Purely-Functional Collections

 ACM International Conference on Programming Language Design and Implementation (PLDI), 2022. Jun. 2022. San Diego, California, USA.

#### Randomized Incremental Convex Hull is Highly Parallel

· ACM Symposium on Parallelism in Algorithms and Architectures (SPAA), 2020. Conference talk. Sept. 2020. Virtual.

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

· International Conference on Very Large Data Bases (VLDB), 2020. Jul. 2020. Virtual.

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

· Algorithm Engineering and Experiments (ALENEX), 2019. Jan. 2019. San Diego, California, USA.

#### **PAM: Parallel Augmented Maps**

· ACM Symposium on Principles and Practice of Parallel Programming (PPoPP), 2019. Mar. 2018. Vienna, Austria.

#### **Just Join for Parallel Ordered Sets**

· ACM Symposium on Parallelism in Algorithms and Architectures (SPAA), 2016. Jul. 2016. Asilomar State Beach, California, USA.

#### A Top-down Parallel Semisort

· ACM Symposium on Parallelism in Algorithms and Architectures (SPAA), 2015. Jun. 2015. Portland, Oregon, USA.

#### **TEACHING**

## **Course Teaching**

The "Overall Rating" is the rating of Question "The course overall as a learning experience was excellent" in iEval.

The "Effectiveness Rating" is the rating of Question "Instructor was effective as a teacher overall" in iEval.

• **UCR CS260**: *Parallel Algorithms* (Winter 2020). Seminar course.

#Respondents: 12/19. Rating: 4.67/5.00. Effectiveness Rating: 4.75/5.00.

· UCR CS141: Intermediate Data Structures and Algorithms (Fall 2020). Undergraduate required course.

#Respondents: 17/63. Rating: **4.18/5.00.** Effectiveness Rating: 4.29/5.00.

· UCR CS218: Design and Analysis of Algorithms (Winter 2021). Graduate core course.

#Respondents: 12/23. Rating: **4.67/5.00.** Effectiveness Rating: 4.92/5.00.

· UCR CS214: Parallel Algorithms (Spring 2021). Tier-1 graduate course.

#Respondents: 18/18. Rating: **4.28/5.00.** Effectiveness Rating: 4.44/5.00.

· UCR CS141: Intermediate Data Structures and Algorithms (Fall 2021). Undergraduate required course.

#Respondents: 66/83. Rating: **3.92/5.00.** Effectiveness Rating: 3.95/5.00.

• **UCR CS214**: *Parallel Algorithms* (Winter 2022). Tier-1 graduate course.

#Respondents: 27/36. Rating: **4.48/5.00.** Effectiveness Rating: 4.37/5.00.

• UCR CS218: Design and Analysis of Algorithms (Spring 2022). Graduate core course.

#Respondents: 10/31. Rating: 4.8/5.00. Effectiveness Rating: 4.8/5.00.

· UCR CS141: Intermediate Data Structures and Algorithms (Fall 2022). Undergraduate required course.

#Respondents: 25/94. Rating: **4.32/5.00.** Effectiveness Rating: 4.28/5.00.

· UCR CS142: Algorithm Engineering (Winter 2022). Undergraduate technical elective course.

#Respondents: 24/46. Rating: **4.58/5.00.** Effectiveness Rating: 4.63/5.00.

· UCR CS218: Design and Analysis of Algorithms (Spring 2023). Graduate core course.

#Respondents: 22/57. Rating: **4.55/5.00.** Effectiveness Rating: 4.41/5.00.

- UCR CS214: Parallel Algorithms (Fall 2023). Tier-1 graduate course.

#Respondents: 14/24. Rating: **4.71/5.00.** Effectiveness Rating: 4.86/5.00.

· UCR CS142: Algorithm Engineering (Winter 2024). Undergraduate technical elective course.

#Respondents: 12/51. Rating: **4.82/5.00.** Effectiveness Rating: 4.83/5.00.

· UCR CS218: Design and Analysis of Algorithms (Spring 2024). Graduate core course.

#Respondents: 49/91. Rating: **4.56/5.00.** Effectiveness Rating: 4.43/5.00.

#### **Guest Lectures**

· Parallel Algorithms on Balanced Binary Trees

**CMU 15-859**: *Algorithms in the "Real World"* (Spring 2018)

· A Top-down Parallel Semisort

MIT 6.886: *Algorithm Engineering* (Spring 2019)

· Parallel Algorithms on Balanced Binary Trees

**MIT 6.886**: *Algorithm Engineering* (Spring 2019)

#### STUDENT MENTORING

#### Ph.D. students

- **Xiaojun Dong** (09/2020 present, co-advised with Prof. Yan Gu)
- **Letong Wang** (09/2020 present, co-advised with Prof. Yan Gu)
- · Yunshu Wu (09/2020 02/2022)
- · **Ziyang Men** (09/2022 present)
- · **Youzhe Liu** (09/2022 present)
- · Xiangyun Ding (09/2023 present, co-advised with Prof. Yan Gu)

#### **Master Students**

- **Zhongqi Wang** (07/2020 present, Master Project advisor, joined University of Maryland, College Park as a Ph.D. student)
- **Haide He** (09/2020 06/2021, Master Project advisor, joined University of California, Merced as a Ph.D. student)
- **Jiawen Lai** (09/2020 03/2021, joined at TikTok USA)
- **Longze Su** (09/2020 03/2021, Master Project advisor)
- Daniel Li (03/2023 09/2014, Master Thesis advisor)
- · Qun Lou (05/2022 09/2022)
- **Brooke Godinez** (09/2022 06/2023)

## **Undergraduate Students**

- · Xiaojun Dong (12/2009 08/2020, co-advised with Yan Gu, joined UCR as a Ph.D. student)
- Yunshu Wu (12/2009 08/2020, co-advised with Yan Gu, joined UCR as a Ph.D. student)
- **Zachary Napier** (01/2021 08/2022, co-advised with Yan Gu)
- Yuta Nakamura (03/2021 04/2023, co-advised with Yan Gu, joined Amazon)
- · Zijin Wan (12/2021 08/2022, co-advised with Yan Gu, joined UCR as a Ph.D. student)
- Andy Li (03/2023 present, co-advised with Yan Gu)
- · **Kelly Wu** (04/2024 present)
- Thomas Li (04/2024 present, co-advised with Yan Gu)
- Jingbo Su (04/2024 present)

## Other Student Proposal/Defense/Exam Committee Members

- · Abenezer Wudenhe (Ph.D. thesis committee)
  - o Dissertation proposal, 03/2024
  - o Dissertation defense, 06/2024
- Harish Kumar Manepalli (Master Project Defense, 03/2024)
- Yunan Zhang (Ph.D. oral exam, 03/2023)
- · Yejia Liu (Ph.D. oral exam, 03/2023)
- · Pengfei Li (Ph.D. oral exam, 09/2022)
- · Yongyi Liu (Ph.D. oral exam, 05/2022)
- · Abenezer Wudenhe (Ph.D. oral exam, 06/2021)
- · Xin Zhang (Ph.D. oral exam, 04/2021)
- · **Anish Sekar** (Master thesis, 12/2020)
- · Irem Ergun (Ph.D. oral exam, 09/2020)

#### **DEPARTMENT SERVICES**

Outreach, Alumni & Careers Committee in CS&E Department. 2020-2021. Graduate Committee in CS&E Department. 2021-present.

Teaching Assistant Committee in CS&E Department. 2022-present. Graduate Admission Committee in CS&E Department. 2022-present. Organizer of UCR Programming Challenge (UCRPC). 2021, 2022, 2023, 2024.

#### PROFESSIONAL SERVICES

#### Seminar/Conference/Workshop Organizing

- Organizer of Dagstuhl Seminar 25341: Software Performance Engineering. To Appear in August 2025.
  Organizing team: Chen Ding (University of Rochester), Martín Farach-Colton (New York University), Charles E.
  Leiserson (MIT), Peter Sanders (Karlsruhe Institute of Technology), Yihan Sun.
  Served as the corresponding organizer.
- **Program Committee co-chair of HOPC@SPAA** (Highlights of Parallel Computing), 2023. Organizing team: Laxman Dhulipala (University of Maryland) and Yihan Sun.
- **Program Committee co-chair of HOPC@SPAA** (Highlights of Parallel Computing), 2024. Organizing team: Laxman Dhulipala (University of Maryland) and Yihan Sun.
- · Publicity Chair. ACM Symposium on Principles and Practice of Parallel Programming (PPoPP), 2025.

#### **Editorial Board**

· Associate Editor. Journal of Parallel and Distributed Computing (JPDC). 2024-present.

#### **Program Committee Members**

#### 2024

- · HiPC (IEEE International Conference on High Performance Computing, Data, And Analytics), 2024.
- · **HOPC** (Highlights of parallel computing), 2024.
- · ICPP (International Conference on Parallel Processing), 2024.
- Euro-Par (International European Conference on Parallel and Distributed Computing), 2024.
- · SPAA (ACM Symposium on Parallelism in Algorithms and Architectures), 2024.
- · IPDPS (International Parallel and Distributed Processing Symposium) 2024.
- **ALENEX** (Algorithm Engineering and Experiments), 2024.
- · PPoPP (ACM Symposium on Principles and Practice of Parallel Programming), 2024.

#### 2023

- **ICPP** (International Conference on Parallel Processing), 2023.
- **HOPC** (Highlights of parallel computing), 2023.
- · ICS (ACM International Conference on Supercomputing), 2023.
- · IPDPS-GrAPL Workshop (Workshop on Graphs, Architectures, Programming, and Learning), 2023.
- · **SPAA** (ACM Symposium on Parallelism in Algorithms and Architectures), 2023.

#### 2022

- · SPAA (ACM Symposium on Parallelism in Algorithms and Architectures), 2022.
- **SEA** (Symposium on Experimental Algorithms), 2022.
- Euro-Par (International European Conference on Parallel and Distributed Computing), 2022.
- · PPoPP (ACM Symposium on Principles and Practice of Parallel Programming), 2022.

#### 2021

- **ESA** (European Symposium on Algorithms), 2021.
- · ACDA (SIAM Conference on Applied and Computational Discrete Algorithms), 2021.
- · Euro-Par (International European Conference on Parallel and Distributed Computing), 2021.
- · **SPAA** (ACM Symposium on Parallelism in Algorithms and Architectures), 2021.

### 2020

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

- **ESA** (European Symposium on Algorithms), 2020.
- · HiPC (IEEE International Conference on High Performance Computing, Data, And Analytics), 2020.

### **Other 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:**

- · FOCS (Foundations of Computer Science) 2024.
- · SODA (ACM-SIAM Symposium on Discrete Algorithms) 2021, 2022, 2024.
- ESA (European Symposium on Algorithms) 2019, 2020, 2023.
- · SPAA (ACM Symposium on Parallelism in Algorithms and Architectures) 2018, 2019.
- IPDPS (International Parallel and Distributed Processing Symposium) 2016, 2020.
- · APoCS (Algorithmic Principles of Computer Systems) 2020.
- · ALENEX (Algorithm Engineering and Experiments) 2020.
- · ICALP (International Colloquium on Automata, Languages and Programming) 2019.
- · **HiPC** (High Performance Computing) **2016**, **2020**.
- Euro-Par (International European Conference on Parallel and Distributed Computing) 2016.
- · FUN (Fun with Algorithms) 2016.

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