Hanlin Ren

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https://hanlin-ren.github.io/ Last updated: Apr 2021

Education

August 2016 – Present **Tsinghua University, China**
Bachelor of Engineering
Major: Computer Science (Special Pilot CS Class, a.k.a Yao Class)
GPA: 3.83/4; rank: 8/38

Research Interests

I am interested in **Algorithm Design** and **Computational Complexity**.

Publications

(Note: in Theoretical Computer Science, the list of authors are usually sorted in alphabetical order.)

- Hardness of KT Characterizes Parallel Cryptography.
  Hanlin Ren and Rahul Santhanam.
  To appear in CCC 2021.
- Constructing a Distance Sensitivity Oracle in $O(n^{2.5794}M)$ Time.
  Yong Gu and **Hanlin Ren**.
  To appear in ICALP 2021.
- Approximate Distance Oracles Subject to Multiple Vertex Failures.
  Ran Duan, Yong Gu, and **Hanlin Ren**.
  SODA 2021.
- Improved Distance Sensitivity Oracles with Subcubic Preprocessing Time.
  Hanlin Ren.
  ESA 2020. **Invited to the JCSS special issue for ESA 2020**.
- Strong Average-Case Circuit Lower Bounds from Non-trivial Derandomization.
  Lijie Chen and **Hanlin Ren**.
  STOC 2020. **Invited to the SICOMP special issue for STOC 2020**.
- Approximating All-Pair Bounded-Leg Shortest Path and APSP-AF in Truly-Subcubic Time.
  Ran Duan and **Hanlin Ren**.
  ICALP 2018.

Manuscripts / In Submission

- A Relativization Perspective on Meta-Complexity.
  Hanlin Ren and Rahul Santhanam.

Academic Talks

Apr 2021 Hardness of KT Characterizes Parallel Cryptography.
Yaoclass Seminar.
Oxford-Warwick complexity meetings.

Academic Talks (Continued)

- Jan 2021 — Approximate Distance Oracles Subject to Multiple Vertex Failures.
  SODA 2021 (virtual talk). https://player.vimeo.com/video/496602190.
- Dec 2020 — Approximate Distance Oracles Subject to Multiple Vertex Failures.
  Yaoclass Seminar.
- Sep 2020 — Improved Distance Sensitivity Oracles with Subcubic Preprocessing Time.
  ESA 2020 (virtual talk). https://youtu.be/2Z46AybFkJ8.
- Jun 2020 — Strong Average-Case Circuit Lower Bounds from Non-trivial Derandomization.
  STOC 2020 (virtual talk). https://youtu.be/xWDQ4LefOVs.
- Mar 2020 — Strong Average-Case Circuit Lower Bounds from Non-trivial Derandomization.
  Special Interest Group on Mathematics & Algorithms, Institute of Computing Technology, Chinese Academy of Science (virtual talk).
- Jul 2018 — Approximating All-Pair Bounded-Leg Shortest Path and APSP-AF in Truly-Subcubic Time.
  ICALP 2018, Prague, Czech Republic.

Teaching Experience

- 2020 Fall — Design and Analysis of Algorithms (graduate level)
  Instructor: Prof. Ran Duan
  Teaching assistant

Selected Awards

- Sep 2019 — Yao Award, bronze prize
- Sep 2018 — Evergrande Scholarship
- Sep 2017 — Baidu "Future Star" Scholarship
- Jul 2015 — Gold medal (15th place) in Chinese National Olympiad in Informatics (NOI)

Languages

- Chinese — native
- English — TOEFL 110 (Reading 30 + Listening 29 + Speaking 23 + Writing 28, May 2019)

Misc

- GRE score (May 2019): Verbal 161, Quantitative 170, AW 4.0