

# Hanlin Ren

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🌐 <https://hanlin-ren.github.io/>

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## 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.)

- 📖 Ran Duan, Yong Gu, and **Hanlin Ren**. Approximate Distance Oracles Subject to Multiple Vertex Failures. In *Proceedings of the 32nd ACM-SIAM Symposium on Discrete Algorithms (SODA)*, 2021.
- 📖 **Hanlin Ren**. Improved Distance Sensitivity Oracles with Subcubic Preprocessing Time. In *Proceedings of the 28th Annual European Symposium on Algorithms (ESA)*, 2020.  
**Invited to the JCSS special issue for ESA 2020**
- 📖 Lijie Chen and **Hanlin Ren**. Strong Average-Case Circuit Lower Bounds from Non-trivial Derandomization. In *Proceedings of the 52nd Annual ACM Symposium on Theory of Computing (STOC)*, 2020.  
**Invited to the SICOMP special issue for STOC 2020**
- 📖 Ran Duan and **Hanlin Ren**. Approximating All-Pair Bounded-Leg Shortest Path and APSP-AF in Truly-Subcubic Time. In *Proceedings of the 45th International Colloquium on Automata, Languages, and Programming (ICALP)*, 2018.

## Manuscripts / In Submission





- 📖 Yong Gu and **Hanlin Ren**. Constructing a Distance Sensitivity Oracle in  $O(n^{2.5794}M)$  Time. *Submitted*.
- 📖 **Hanlin Ren** and Rahul Santhanam. A Relativization Perspective on Meta-Complexity. *Submitted*.
- 📖 **Hanlin Ren** and Rahul Santhanam. Hardness of KT Characterizes Parallel Cryptography. *Submitted*.

## Academic Talks

- Apr 2021 📖 Hardness of KT Characterizes Parallel Cryptography. Yaoclass Seminar.
- 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.


## Academic Talks (Continued)

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- 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/xWDQ4Lef0Vs>.
- 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

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

## Selected Awards

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- 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

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

## Misc

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