

Hanlin Ren

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📅 Last updated: Nov 2021

Education

Oct 2021 – present

📖 **University of Oxford, UK**
DPhil in computer science
Advisor: Prof. Rahul Santhanam

Aug 2016 – Jun 2021

📖 **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

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.
CCC 2021. *Invited to the ToC special issue for CCC 2021.*
- 📖 **Constructing a Distance Sensitivity Oracle in $O(n^{2.5794}M)$ Time.**
Yong Gu and Hanlin Ren.
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.
- 📖 **Hardness on Any Samplable Distribution Suffices: New Characterizations of One-Way Functions by Meta-Complexity.**
Rahul Ilango, Hanlin Ren, and Rahul Santhanam.
- 📖 **Maintaining Exact Distances under Multiple Edge Failures.**
Ran Duan and Hanlin Ren.

Academic Talks

- **Faster Algorithms for Distance Sensitivity Oracles.**
IJTCS 2021 (hybrid). Aug 2021
Yaoclass Seminar. Nov 2021
- **Constructing a Distance Sensitivity Oracle in $O(n^{2.5794}M)$ Time.**
ICALP 2021 (online). <http://youtu.be/uIFoucab6d4> Jul 2021
- **Hardness of KT Characterizes Parallel Cryptography.**
CCC 2021 (online). <http://youtu.be/esFxj1cNLCE> Jul 2021
Yaoclass Seminar. Apr 2021
Oxford-Warwick complexity meetings (online). Apr 2021
- **Approximate Distance Oracles Subject to Multiple Vertex Failures.**
SODA 2021 (online). <https://player.vimeo.com/video/496602190>. Jan 2021
Yaoclass Seminar. Dec 2020
- **Improved Distance Sensitivity Oracles with Subcubic Preprocessing Time.**
ESA 2020 (online). <https://youtu.be/2Z46AybFkJ8>. Sep 2020
- **Strong Average-Case Circuit Lower Bounds from Non-trivial Derandomization.**
STOC 2020 (online). <https://youtu.be/xWDQ4Lef0Vs>. Jun 2020
SIGMA, ICT, Chinese Academy of Science (online). Mar 2020
- **Approximating All-Pair Bounded-Leg Shortest Path and APSP-AF in Truly-Subcubic Time.**
ICALP 2018, Prague, Czech Republic. Jul 2018

Special Issue Invitation

- STOC 2020, ESA 2020, CCC 2021

Teaching Experience

- 2020 Fall ■ **Design and Analysis of Algorithms** (graduate level)
Instructor: Prof. Ran Duan
Teaching assistant
- 2021 Spring ■ **Theory of Computation** (undergraduate level)
Instructor: Prof. Ran Duan
Teaching assistant

Service

- **Conference reviewing:** RANDOM 2021, ITCS 2022

Selected Awards

- 2021 ■ Clarendon Scholarship
- 2019 ■ Yao Award, bronze prize
- 2018 ■ Evergrande Scholarship
- 2017 ■ Baidu "Future Star" Scholarship
- 2015 ■ Gold medal (15th place) in Chinese National Olympiad in Informatics (NOI)