Guangxu Yang

Curriculum Vitae

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Education

2019.09–2022.06 **M.E. in Information and Communication Engineering**, University of Electronic Science and Technology of China (UESTC), Chengdu, China, GPA: 3.77/4.

2015.09–2019.06 **B.E. in Network Engineering**, University of Electronic Science and Technology of China (UESTC), Chengdu, China, GPA: 3.89/4, Ranking: 5/147.

Research Interests

- My research interests lie in computational complexity theory. Previously, I have been worked on communication complexity, such as lifting theorems and information complexity. I am also broadly interested in computational complexity theory in general.

Research Experiences

2020.04–Current **Research Internship**, University of Southern California , Online in Zoom.
Advisors: Jiapeng Zhang, Reseach area: communication complexity

Summer 2021 **Research Internship**, Laboratory For Quantum and Theoretical Computer Science, Institute of Computing Technology, Chinese Academy of Sciences.
Advisors: Qian Li, Reseach area: streaming algorithms lower bound

Summer 2019 **Research Internship**, CS Theory Group, Nanjing University.
Advisors: Penghui Yao, Reseach area: analysis of boolean function

Publications

- **Lifting Theorems Meet Information Complexity: Set Disjointness** (In preparation)
- Jack DePascale, Guangxu Yang, Jiapeng Zhang (alphabetical order)
- Give a simple proof of the optimal $\Omega(n/k)$ lower bounds on deterministic and randomized communication complexity of the k-party set disjointness function with the unique intersection promise in the blackboard model.
- Build the connection between information complexity and lifting theorems
- **Simulation Methods in Communication Lower Bounds, Revisited** (In preparation)
- Jack DePascale, Guangxu Yang, Jiapeng Zhang (alphabetical order)
- Propose a new simulation technique for proving lifting theorems.
- Prove a lifting theorem for block sensitivity via a new simulation technique. We show that $\mathbf{P}^{\mathrm{cc}}(f \circ g^n) = \Omega(\log q \cdot \mathrm{bs}(f))$ and $\mathbf{BPP}^{\mathrm{cc}}(f \circ g^n) = \Omega(\log q \cdot \mathrm{bs}(f))$ for any for all gadgets $g : [q] \times [q] \to \{0,1\}$ with $q > 2$ that have exponentially-small discrepancy.

Languages

- **Chinese:** Mother tongue
- **English:** TOEFL iBT: (Reading 26 , Listening 27, Speaking 17, Writing 20)