

Yupan Liu

Curriculum Vitae

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Education

- 2020.07– **Ph.D. in Computer Science (Discontinued)**, *Hebrew University*, Jerusalem, Israel.
2020.12 Advisors: Dorit Aharonov
- 2017.10– **M.Sc. in Computer Science**, *Hebrew University*, Jerusalem, Israel.
2020.03 Advisors: Dorit Aharonov and Itai Arad (Technion)
Overall GPA: 93.22
M.Sc. Thesis: *Towards a quantum-inspired proof for $IP = PSPACE$*
- 2013.09– **B.Eng. in Computer Science and Technology**, *Zhejiang University*, Hangzhou, China.
2017.07 Overall GPA: 85.28, Major (last-two-year) GPA: 88.22
Senior Project Advisor: Xin Wan

Research Interests

My research interests lie in theoretical computer science, with a particular focus on quantum computing and complexity theory, such as problems that I used to work on: derandomization's consequences from a quantum perspective (e.g., StoqMA vs. MA), Hamiltonian complexity (e.g., Hamiltonian learning problem, stoquastic area law), and delegating quantum computation using interactive proofs. I am also broadly interested in theoretical computer science in general.

Research Experience

- 2017-2020 **Research Student**, *CS Theory Group*, Hebrew University, Jerusalem, Israel.
Advisors: Dorit Aharonov and Itai Arad
- 2018-2019 **Research Student**, *CS Theory Group*, Hebrew University, Jerusalem, Israel.
Advisors: Guy Kindler
- Summer 2019 **Research Internship**, National University of Singapore, Singapore.
Advisors: Itai Arad and Miklos Santha
- Summer 2016 **Research Internship**, National University of Singapore, Singapore.
Advisors: Itai Arad and Miklos Santha
- 2016–2017 **Research Student**, *Department of Physics*, Zhejiang University, Hangzhou, China.
Advisor: Xin Wan

Publications

(The authors of papers in theoretical computer science are listed alphabetically.)

(Detailed abstracts can be found on my website.)

- ◇ Yupan Liu. *StoqMA meets distribution testing*. In Proceedings of 16th Conference on the Theory of Quantum Computation, Communication and Cryptography (TQC 2021), LIPIcs volume 197, pp.4:1-4:22, 2021. Also available at arXiv: 2011.05733, 2020.

- ◇ Dorit Aharonov, Alex B. Grilo, and Yupan Liu. *StoqMA vs. MA: the power of error reduction*. To appear in Quantum. Also available at arXiv: 2010.02835, 2020.
- ◇ Ayal Green, Guy Kindler, and Yupan Liu. *Towards a quantum-inspired proof for $IP = PSPACE$* . Quantum Information & Computation, 21(5-6):0377-0386, 2021. Also available at arXiv: 1912.11611, 2019.
- ◇ Yupan Liu. *On learning Pauli commuting local Hamiltonians*. Appeared as an accepted poster at the 23rd Conference on Quantum Information Processing (QIP 2020).

Professional Service

- Reviewer
- ◇ The 24th Annual Conference on Quantum Information Processing (QIP 2021)
 - ◇ The 61st Annual Symposium on Foundations of Computer Science (FOCS 2020)
 - ◇ The 15th Conference on the Theory of Quantum Computation, Communication and Cryptography (TQC 2020)

Teaching Experience

- Fall 2019 **Kazhdan's Lecture: Computation, quantumness, symplectic geometry, information**, Hebrew University, Jerusalem, Israel.
 Instructors: Gil Kalai, Leonid Polterovich, Dorit Aharonov, Guy Kindler
 Scribed notes for all computer science oriented lectures (half of the course).

Languages

- Chinese **Mothertongue**
 English **Fluent**