Gal Arnon

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Education

Ph.D. Computer Science   2020-Present
Weizmann Institute of Science   *(Thesis submitted, awaiting thesis defense)*
Advised By: Prof. Moni Naor and Dr. Eylon Yogev
Thesis: New Advancements in Interactive Oracle Proofs: Theory, Practice, and Limitations

M.Sc. Computer Science   2017–2020
Weizmann Institute of Science
Advised By: Prof. Guy N. Rothblum
Thesis: On Prover-Efficient Public-Coin Emulation of Interactive Proofs

B.Sc. Electrical Engineering and Computer Science   2013–2017
Tel Aviv University
Magna Cum Laude

Research Interests

Foundations of cryptography, computational complexity and theory of computation, probabilistic proof systems in both theory and practice.

Awards

○ **Esther Hellinger Memorial Prize for academic excellence**. *Awarded in 2024 by the Weizmann Institute.*

○ **Best Paper Award** for "STIR: Reed–Solomon Proximity Testing with Fewer Queries". *At Advances in Cryptology, the 44th Annual International Cryptology Conference (CRYPTO 2024).*

Publications

11. **Towards a White-Box Secure Fiat-Shamir Transformation**. Gal Arnon and Eylon Yogev. *Invited paper at ZKSummit 12..*

10. **Instance Compression, Revisited**. Gal Arnon, Shany Ben-David, and Eylon Yogev. *To appear in proceedings of the 44th Annual International Conference on Theory and Application of Cryptographic Techniques (EUROCRYPT 2025).*

9. **WHIR: Reed–Solomon Proximity Testing with Super-Fast Verification**. Gal Arnon, Alessandro Chiesa, Giacomo Fenzi, and Eylon Yogev. *To appear in proceedings of the 44th Annual International Conference on Theory and Application of Cryptographic Techniques (EUROCRYPT 2025).*
   Additionally appeared in ZKSummit 12 and to appear in ZKProof 7.

8. **Hamming Weight Proofs of Proximity with One-Sided Error**. Gal Arnon, Shany Ben-David, and Eylon Yogev. *In proceedings of the 22nd Theory of Cryptography Conference (TCC 2024).*

7. **STIR: Reed–Solomon Proximity Testing with Fewer Queries**. Gal Arnon, Alessandro Chiesa, Giacomo Fenzi, and Eylon Yogev. *In proceedings of Advances in Cryptology, the 44th Annual International Cryptology Conference (CRYPTO 2024)*, Part X, pp. 380–413. **Best Paper Award**.
   Additionally appeared in ZKSummit 11 and ZKProof 6.

6. **IOPs with Inverse Polynomial Soundness Error**. Gal Arnon, Alessandro Chiesa, and Eylon Yogev. *In proceedings of the 64th IEEE Annual Symposium on Foundations of Computer Science (FOCS 2023), pp. 752–761.*

5. **A Toolbox for Barriers on Interactive Oracle Proofs**. Gal Arnon, Amey Bhangale, Alessandro Chiesa, and Eylon Yogev. *In proceedings of the 20th Theory of Cryptography Conference (TCC 2022), pp. 447–466*

4. **Hardness of Approximation for Stochastic Problems via Interactive Oracle Proofs**. Gal Arnon, Alessandro Chiesa, and Eylon Yogev. *In proceedings of the 37th Annual IEEE Conference on Computational Complexity (CCC 2022), pp. 24:1–24:16.*

3. **Min-Entropic Optimality**. Gal Arnon and Tomer Grossman. *(Manuscript.)*

2. **A PCP Theorem for Interactive Proofs and Applications**. Gal Arnon, Alessandro Chiesa, and Eylon Yogev. *In proceedings of the 41st Annual International Conference on Theory and Application of Cryptographic Techniques (EUROCRYPT 2022), pp. 64–94.*

1. **On Prover-Efficient Public-Coin Emulation of Interactive Proofs**. Gal Arnon and Guy N. Rothblum. *In proceedings of the 2nd Conference on Information-Theoretic Cryptography (ITC 2021), volume 199 of LIPIcs, pp. 3:1–3:15.*

Invited Talks

○ IOPs with Inverse Polynomial Soundness Error. *ITC 2024 Highlights Track, Stanford University, United States. August 2024.*

○ How to convince someone who's barely listening (even to themselves). *At Efficient Probabilistic Proofs Workshop, Bertinoro, Italy. July 2022.*

Long-Term Visits

○ Proofs, Consensus, and Decentralizing Society Semester at the Simons Institute, UC Berkeley. August-October 2019.

Service

Workshop Organization: Lattices Meet Hashes: Recent Advances in Post-Quantum Zero-Knowledge Proofs. *Postdoctoral Workshop at the Bernoulli Center, EPFL, Lausanne, Switzerland. Organized together with Ngoc Khanh Nguyen. May 2023.*

Sub-reviewer: CCC (2024), CRYPTO (2019, 2022, 2023, 2024), ITCS (2022), SODA (2024), STOC (2025), TCC (2021, 2023)

Talks

○ STIR: Reed–Solomon Proximity Testing with Fewer Queries
  - *CRYPTO 2024, Santa Barbara, United States. August 2024.*
  - *Interuniversity TCS Student Seminar, Tel Aviv University, Tel Aviv, Israel. May 2024.*
  - *Theory Lunch at the Weizmann Institute of Science, Rehovot, Israel. May 2024.*
  - *HUJI TCS Seminar, Jerusalem, Israel. May 2024.*
  - *StarkWare Industries, Netanya, Israel. April 2024.*
  - *ZKSummit 11, Athens, Greece. April 2024.*

○ IOPs with Inverse Polynomial Soundness Error
  - *ITC 2024 Highlights Track, Stanford University, United States. August 2024.*
  - *Technion TCS Seminar, Haifa, Israel. February 2024.*
  - *ZK Study Club, Virtual. October 2023.*
  - *StarkWare Industries, Netanya, Israel. September 2023.*
  - *Interuniversity TCS Student Seminar, Tel Aviv University, Tel Aviv, Israel. July 2023.*
  - *IST Austria TCS Seminar, Vienna, Austria. June 2023.*

○ A Toolbox for Barriers on Interactive Oracle Proofs
  - *TCC 2022, Chicago, USA. November 2022.*

○ How To Be Convinced While Barely Listening (Even to Yourself)
  - *EPFL CS Theory Reading Group, Lausanne, Switzerland. May 2023.*
  - *Efficient Probabilistic Proofs Workshop, Bertinoro, Italy. July 2022. (Talk given under alternate title.)*

○ Hardness of Approximation for Stochastic Problems via Interactive Oracle Proofs
  - *CCC 2022, Philadelphia, USA. July 2022. (Talk given virtually.)*

- A PCP Theorem for Interactive Proofs and Applications
  - *EUROCRYPT 2022, Trondheim, Norway. May-June 2022.*
  - *Theory Lunch at the Weizmann Institute of Science, Rehovot, Israel. July 2021.*

- On Prover-Efficient Public-Coin Emulation of Interactive Proofs
  - *ITC 2021, Virtual. July 2021.*
  - *"Proofs, Consensus, and Decentralizing Society" Program Seminar at Simons Institute, Berkeley, USA. October 2019.*

Teaching

Teaching Assistant:

- Foundations and Frontiers of Probabilistic Proofs. *MSRI (SLMath) summer graduate school. Zurich, Switzerland. July 2023.*
- Foundations and Frontiers of Probabilistic Proofs. *MSRI summer graduate school. Held virtually. July-August 2021.*

Instructor: Mini-Course on Zero-Knowledge Proofs. *Amos de-Shalit Summer School, Weizmann Institute of Science. September 2018.*