Arsen Vasilyan

32 Vassar Street 32-G585C • Cambridge, MA 02139
(857) 253-9275 • vasilyan@mit.edu

Research Interests

- Computational learning theory
- Distribution learning and testing
- Computational statistics
- Algorithms more generally

Education

Massachusetts Institute of Technology(MIT) June 2020 - present
Ph.D. Candidate in Computer Science GPA: 5.0
Advisors: Jonathan Kelner, Ronitt Rubinfeld

Massachusetts Institute of Technology(MIT) September 2019 - June 2020
M.S. in Electrical Engineering and Computer Science GPA: 5.0
Thesis: *Approximating the Noise Sensitivity of a Monotone Boolean Function*
Advisor: Ronitt Rubinfeld

Massachusetts Institute of Technology(MIT) September 2016 - June 2019
B.S. in Computer Science GPA: 5.0
Minor in Physics / Minor in Philosophy

Relevant coursework: *Advanced Algorithms, Algorithmist's Toolkit, Inference and Information, Algorithms for Inference, Information theory in Computer Science, Computational Geometry, Randomness and Computation, Fine-grained Computation, Cryptography and Cryptanalysis, Learning with Errors and Post-Quantum Cryptography, Quantum physics I, II, Statistical physics I, General relativity, Algebraic Combinatorics, Elliptic Curves, Intro to Algebraic Geometry*

Publications

Testing Distributional Assumptions of Learning Algorithms
Ronitt Rubinfeld, Arsen Vasilyan
55th ACM Symposium on Theory of Computing (**STOC 2023**)

Properly Learning Monotone Functions via Local Reconstruction
Jane Lange, Ronitt Rubinfeld, Arsen Vasilyan
63rd IEEE Symposium on Foundations of Computer Science (**FOCS 2022**)

Monotone Probability Distributions over the Boolean Cube Can Be Learned with Sublinear Samples
Ronitt Rubinfeld, Arsen Vasilyan
11th Innovations in Theoretical Computer Science Conference (**ITCS 2020**)

Approximating the Noise Sensitivity of a Monotone Boolean Function
Ronitt Rubinfeld, Arsen Vasilyan
Approximation, Randomization, and Combinatorial Optimization. Algorithms and Techniques (**APPROX/RANDOM 2019**).

Preprints

Agnostic Proper Learning of Monotone Functions: Beyond the Black-box Correction Barrier
Jane Lange and Arsen Vasilyan
Preprint arXiv:2304.02700 (2023).

An Efficient Tester-Learner for Halfspaces
Aravind Gollakota, Adam R. Klivans, Konstantinos Stavropoulos, Arsen Vasilyan
Preprint arXiv:2302.14853 (2023).

Tester-Learners for Halfspaces: Universal Algorithms
Aravind Gollakota, Adam R. Klivans, Konstantinos Stavropoulos, Arsen Vasilyan
Preprint arXiv:2305.11765 (2023).

Awards

- **Second Place – William A. Martin Master's Thesis Award** **Cambridge, Massachusetts**
  August 2021
- **Silver Medal – International Physics Olympiad** **Astana, Kazakhstan**
  July 2014