

**Arsen Vasilyan**  
Austin, Texas  
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## Research Interests

- Computational learning theory
  - Foundations of Machine Learning
  - Computational Statistics
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## Appointments

**University of Texas at Austin** January 2025 - Present  
**Postdoctoral Fellow**  
Advisor: Adam Klivans

**Simons Institute for Theory of Computation at UC Berkeley** August 2024 - December 2024  
**Research Fellow**  
Programs: Modern Paradigms in Generalization, Large Language Models and Transformers

**Massachusetts Institute of Technology (MIT)** May 2024 - August 2024  
**Research Specialist**  
Advisor: Ronitt Rubinfeld

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## Education

**Massachusetts Institute of Technology (MIT)** June 2020 - March 2024  
**Ph.D. in Computer Science**  
Thesis Title: Enhancing Learning Algorithms via Sublinear-Time Methods  
Advisors: Jonathan Kelner, Ronitt Rubinfeld

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

**Massachusetts Institute of Technology (MIT)** September 2015 - June 2019  
**B.S. in Computer Science**  
Minor in Physics / Minor in Philosophy

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## Awards

**Best Paper Award** December 2025  
Reliable ML from Unreliable Data Workshop, NeurIPS  
San Diego, California

**Dimitris N. Chorafas Foundation Thesis Award** September 2024  
Vitznau, Switzerland

**Second Place — William A. Martin Master’s Thesis Award**  
Cambridge, Massachusetts

August 2021

**Silver Medal — International Physics Olympiad**  
Astana, Kazakhstan

July 2014

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## List of Publications

**Note: all author lists are alphabetical.**

*A Fully Polynomial-Time Algorithm for Robustly Learning Halfspaces over the Hypercube*  
Gautam Chandrasekaran, Adam R. Klivans, Konstantinos Stavropoulos, Arsen Vasilyan  
58th ACM Symposium on Theory of Computing (**STOC 2026**, to appear)

*Testable algorithms for approximately counting edges and triangles in sublinear time and space*  
Talya Eden, Ronitt Rubinfeld, Arsen Vasilyan  
17th Innovations in Theoretical Computer Science Conference (**ITCS 2026**)

*Robust Learning of Halfspaces under Log-Concave Marginals*  
Jane Lange, Arsen Vasilyan  
39th Conference on Neural Information Processing Systems (**NeurIPS 2025**)  
**Accepted as a Spotlight presentation**

*The Power of Iterative Filtering for Supervised Learning with (Heavy) Contamination*  
Adam R. Klivans, Konstantinos Stavropoulos, Kevin Tian, Arsen Vasilyan  
39th Conference on Neural Information Processing Systems (**NeurIPS 2025**)  
**Accepted as a Spotlight presentation**

*Learning Constant-Depth Circuits in Malicious Noise Models*  
Adam R. Klivans, Konstantinos Stavropoulos, Arsen Vasilyan  
38th Annual Conference on Learning Theory (**COLT 2025**)

*Local Lipschitz Filters for Bounded-Range Functions*  
Jane Lange, Ephraim Linder, Sofya Raskhodnikova, Arsen Vasilyan  
36th ACM-SIAM Symposium on Discrete Algorithms (**SODA 2025**)

*Tolerant Algorithms for Learning with Arbitrary Covariate Shift*  
Surbhi Goel, Abhishek Shetty, Konstantinos Stavropoulos, Arsen Vasilyan  
38th Conference on Neural Information Processing Systems (**NeurIPS 2024**)  
**Accepted as a Spotlight presentation.**

*Efficient Discrepancy Testing for Learning with Distribution Shift*  
G. Chandrasekaran, A. R. Klivans, Vasilis Kontonis, K. Stavropoulos, A. Vasilyan  
38th Conference on Neural Information Processing Systems (**NeurIPS 2024**)

*Plant-and-Steal: Truthful Fair Allocations via Predictions*  
Ilan Reuven Cohen, Alon Eden, Talya Eden, Arsen Vasilyan  
38th Conference on Neural Information Processing Systems (**NeurIPS 2024**)

*Learning Intersections of Halfspaces with Distribution Shift: Improved Algorithms and SQ Lower Bounds*

Adam R. Klivans, Konstantinos Stavropoulos, Arsen Vasilyan

37th Annual Conference on Learning Theory (**COLT 2024**) *Testable Learning with Distribution Shift*

Adam R. Klivans, Konstantinos Stavropoulos, Arsen Vasilyan

37th Annual Conference on Learning Theory (**COLT 2024**)

*An Efficient Tester-Learner for Halfspaces*

Aravind Gollakota, Adam R. Klivans, Konstantinos Stavropoulos, Arsen Vasilyan

12th International Conference on Learning Representations (**ICLR 2024**)

*Tester-Learners for Halfspaces: Universal Algorithms*

Aravind Gollakota, Adam R. Klivans, Konstantinos Stavropoulos, Arsen Vasilyan

37th Conference on Neural Information Processing Systems (**NeurIPS 2023**)

**Accepted as an Oral Presentation.**

*Agnostic Proper Learning of Monotone Functions: Beyond the Black-box Correction Barrier*

Jane Lange and Arsen Vasilyan

64th IEEE Symposium on Foundations of Computer Science (**FOCS 2023**)

**Invited to special issue of SIAM Journal on Computing.**

*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

International Conference on Randomization and Computation (**RANDOM 2019**)

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## Journal Articles

*Agnostic Proper Learning of Monotone Functions: Beyond the Black-box Correction Barrier*

Jane Lange and Arsen Vasilyan

SIAM Journal on Computing, 2025.

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## Preprints

*Testing Noise Assumptions of Learning Algorithms*

Surbhi Goel, Adam R. Klivans, Konstantinos Stavropoulos, Arsen Vasilyan

Preprint arXiv:2501.09189 (2025)

**Best Paper Award** at Reliable ML from Unreliable Data Workshop @ NeurIPS 2025

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## Invited Talks

- IFML Seminar, University of Texas at Austin *January 2025*
  - Joint IFML/MPG Symposium, Simons Institute at UC Berkeley *November 2024*
  - University of Michigan Theory Seminar *October 2024*
  - Sublinear Algorithms Program, Simons Institute at UC Berkeley *May 2024*
  - Princeton Theory Seminar *February 2024*
  - Toyota Technological Institute at Chicago, Junior Theorists Workshop *December 2023*
  - Carnegie Mellon University, Theory seminar *November 2023*
  - Bar-Ilan University, Theory seminar *June 2023*
  - Harvard-MIT Theory Reading Group (joint talk with Ronitt Rubinfeld) *April 2023*
  - Carnegie Mellon University, Theory seminar *October 2022*
  - Columbia University, Theory seminar *September 2022*
  - Stanford University *February 2022*
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## Teaching

### Massachusetts Institute of Technology (MIT)

#### Teaching Assistant

- **6.UAR Advanced Undergraduate Research Program** *Spring 2023*  
Trained advanced undergraduate students in computer science communication skills. Ensured their research projects are on track.
  - **6.875 [Graduate course] Cryptography and Cryptanalysis** *Fall 2019*  
Developed homework assignments and held weekly office hours.
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## Service

- **External referee**  
ACM Symposium on Theory of Computing (**STOC**), Symposium on Foundations of Computer Science (**FOCS**), Innovations in Theoretical Computer Science (**ITCS**), Symposium on Discrete Algorithms (**SODA**), International Conference on Randomization and Computation (**RANDOM**), International Colloquium on Automata, Languages, and Programming (**ICALP**), The International Conference on Learning Representations (**ICLR**), Conference on Learning Theory (**COLT**), Conference on Neural Information Processing Systems (**NeurIPS**)  
NeurIPS 2025 **Outstanding reviewer**
  - **Program Committee:**  
29th International Conference on Randomization and Computation (**RANDOM 2025**)
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## Outreach

- **MIT Graduate Application Assistance Program (GAAP)** 2021 - 2023  
Mentored 1:1 underrepresented applicants to computer science program at MIT. Held meetings through the graduate application process, meeting periodically with applicants all the way up to the deadline.
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