

# Vasilis Kontonis

University of Wisconsin-Madison  
Department of Computer Sciences  
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Research Interests    **Theoretical Computer Science, Machine Learning, Statistics**

Education            **University of Wisconsin-Madison**  
Ph.D., Computer Science, 2018 – present.  
Advisor: Christos Tzamos

**National Technical University of Athens**  
Master of Engineering in Electrical & Computer Engineering  
Thesis: Learning Powers of Poisson Binomial Distributions  
Advisor: Dimitris Fotakis

Work Experience    **Research Intern** Google Research  
*2022, Google Research, Mountain View, California*  
  
**Systems and Services Engineer** GRNET  
*2016, Greek Research and Technology Network, Athens*

Publications        **Learning General Halfspaces with General Massart Noise  
under the Gaussian Distribution**  
Ilias Diakonikolas, Daniel M. Kane, Vasilis Kontonis,  
Christos Tzamos, Nikos Zarifis  
*Proceedings of the 54th Annual ACM Symposium on Theory of Computing*  
**STOC 2022**

**Learning a Single Neuron with Adversarial Label Noise  
via Gradient Descent**  
Ilias Diakonikolas, Vasilis Kontonis, Christos Tzamos, Nikos Zarifis  
*Proceedings of the 35th Annual Conference on Learning Theory*  
**COLT 2022**

**Learning General Halfspaces with Adversarial Label Noise  
via Online Gradient Descent**  
Ilias Diakonikolas, Vasilis Kontonis, Christos Tzamos, Nikos Zarifis  
*Proceedings of the 39th International Conference on Machine Learning*  
**ICML 2022**

**A Statistical Taylor's Theorem and Extrapolation  
of Truncated Densities**

Costis Daskalakis, Vasilis Kontonis, Christos Tzamos, Manolis Zampetakis  
*Proceedings of the 34th Annual Conference on Learning Theory*  
**COLT 2021**

**Efficient Algorithms for Learning from Coarse Labels**  
Dimitris Fotakis, Alvertos Kalavasis, Vasilis Kontonis, Christos Tzamos  
*Proceedings of the 34th Annual Conference on Learning Theory*  
**COLT 2021**

**Agnostic Proper Learning of Halfspaces under Gaussian Marginals**  
Ilias Diakonikolas, Daniel M. Kane, Vasilis Kontonis,  
Christos Tzamos, Nikos Zarifis  
*Proceedings of the 34th Annual Conference on Learning Theory*  
**COLT 2021**

**Learning Online Algorithms with Distributional Advice**  
Ilias Diakonikolas, Vasilis Kontonis, Christos Tzamos,  
Ali Vakilian, Nikos Zarifis  
*Proceedings of the 38th International Conference on Machine Learning*  
**ICML 2021**

**A Polynomial Time Algorithm For Learning Halfspaces  
with Tsybakov Noise**  
Ilias Diakonikolas, Daniel M. Kane, Vasilis Kontonis,  
Christos Tzamos, Nikos Zarifis  
*Proceedings of the 53rd Annual ACM Symposium on Theory of Computing*  
**STOC 2021**

**Learning Halfspaces with Tsybakov Noise**  
Ilias Diakonikolas, Vasilis Kontonis, Christos Tzamos, Nikos Zarifis  
*Proceedings of the 53rd Annual ACM Symposium on Theory of Computing*  
**STOC 2021** (Conference version merged with the above paper)

**Non-Convex SGD Learns Halfspaces with Adversarial Label Noise**  
Ilias Diakonikolas, Vasilis Kontonis, Christos Tzamos, Nikos Zarifis  
*Proceedings of the 34th Conference on Neural Information Processing Systems*  
**NeurIPS 2020**

**Learning Halfspaces with Massart Noise  
Under Structured Distributions**  
Ilias Diakonikolas, Vasilis Kontonis, Christos Tzamos, Nikos Zarifis  
*Proceedings of the 33th Annual Conference on Learning Theory*  
**COLT 2020**

**Algorithms and SQ lower bounds for PAC Learning**

### **One-Hidden-layer ReLU Networks**

Ilias Diakonikolas, Daniel M. Kane, Vasilis Kontonis, Nikos Zarifis

*Proceedings of the 33th Annual Conference on Learning Theory*

**COLT 2020**

### **Truncated Statistics with Unknown Truncation**

Vasilis Kontonis, Christos Tzamos, Manolis Zambetakis

*Proceedings of the 60th Annual IEEE Symposium on Foundations of Computer Science, FOCS 2019*

### **Removing Bias in Machine Learning via Truncated Statistics**

Costis Daskalakis, Vasilis Kontonis, Christos Tzamos, Manolis Zambetakis

*Manuscript*

### **Opinion Dynamics with Limited Information**

Dimitris Fotakis, Vardis Kandiros, Vasilis Kontonis, and Stratis Skoulakis

*Proceedings of the 14th Conference on Web and Internet Economics*

**WINE 2018**

### **Learning Powers of Poisson Binomial Distributions**

Dimitris Fotakis, Vasilis Kontonis, Piotr Krysta, and Paul Spirakis

*Manuscript, <http://arxiv.org/abs/1707.05662>*

## Teaching

### **Spring 2022, University of Wisconsin-Madison**

Teaching Assistant, “Introduction to Artificial Intelligence”, CS 540

Instructors: Sharon Li, Ilias Diakonikolas, Jerry Zhu

### **Fall 2021, University of Wisconsin-Madison**

Teaching Assistant, “Introduction to Numerical Methods”, CS 412

Instructor: Amos Ron

### **Spring 2021, University of Wisconsin-Madison**

Teaching Assistant, “Introduction to Algorithms”, CS 577

Instructors: Christos Tzamos, Marc Renault

### **Fall 2020, University of Wisconsin-Madison**

Teaching Assistant, “Programming II”, CS 300

Instructors: Mouna Ayari Ben Hadj Kacem, Laura Legault

### **Spring 2020, University of Wisconsin-Madison**

Teaching Assistant, “Introduction to Algorithms”, CS 577

Instructor: Christos Tzamos

### **Spring 2019, University of Wisconsin-Madison**

Teaching Assistant, “Introduction to Algorithms”, CS 577

Instructor: Dieter van Melkebeek

**Fall 2018, University of Wisconsin-Madison**

Teaching Assistant, “Introduction to Algorithms”, CS 577

Instructors: Christos Tzamos, Shuchi Chawla

**Fall 2017, National Technical University of Athens**

Teaching Assistant, “Algorithms and Complexity”

Instructor: Aris Pagourtzis

**Fall 2016, National Technical University of Athens**

Teaching Assistant, “Operating Systems”

Instructors: Nectarios Koziris, Georgios Goumas, Vangelis Koukis

Service

**Conference Reviewer**

NeurIPS 2021, ICML 2021, EC 2021, STOC 2020, ALT 2020, SODA 2019

ICML 2019, EC 2019, WINE 2019, MFCS 2018

**Journal Reviewer**

Theoretical Computer Science (TCS)

Talks

**Learning General Halfspaces with General Massart Noise  
under the Gaussian Distribution**

*2022 54th ACM Symposium on Theory of Computing (STOC2022)*

**A Statistical Taylor’s Theorem and Extrapolation  
of Truncated Densities**

*2022, 34th Annual Conference on Learning Theory (COLT 2021)*

**A Statistical Taylor’s Theorem and Extrapolation  
of Truncated Densities**

*2021, 34th Annual Conference on Learning Theory (COLT 2021)*

**Agnostic Proper Learning of Halfspaces under Gaussian Marginals**

*2021, 34th Annual Conference on Learning Theory (COLT 2021)*

**Efficient Algorithms for Learning Halfspaces with Tsybakov Noise**

*2021, 53rd Symposium on Theory of Computing (STOC 2021)*

**Non-Convex SGD Learns Halfspaces with Adversarial Label Noise**

*2020, 34th Conference on Neural Information Processing Systems (Neurips 2020)*

**Learning Halfspaces with Massart Noise  
Under Structured Distributions**

*2020, 33th Annual Conference on Learning Theory (COLT 2020)*

**Truncated Statistics with Unknown Truncation**

*Symposium on Foundations of Computer Science (FOCS 2019)*

*Workshop on Algorithms for Learning and Economics (WALE2019)*

*14th Athens Colloquium on Algorithms and Complexity (ACAC19)*

*Theory Study Group, University of Wisconsin-Madison*

**Learning Powers of Poisson Binomial Distributions**

*2017, ECCO Research Seminar, University of Liverpool*

**Bias-Variance Tradeoff, VC-Dimension**

*2017, Learning Theory Study Group, Corelab, NTUA*

**Applications of LP, QP, SOCP and SDP.**

**SDP Relaxations: MaxCut.**

**Vector Optimization, Duality**

*2017, Convex Optimization Minicourse, Corelab, NTUA.*

Awards

Recipient of the Gerondellis Fellowship 2020

Recipient of the Eurobank Grant "The great moment for Education" in 2010 for graduating first in my high-school.

Recipient of the Touramanoglou Grant in 2010 for ranking among the top high school graduates of the cities of Ilioupolis and Ymittos.

Languages  
and Skills

English(native), German (advanced)

Mathematica, Python, L<sup>A</sup>T<sub>E</sub>X, GNU/Linux

References

**Christos Tzamos**

Assistant Professor, University of Wisconsin-Madison

**Dimitris Fotakis**

Associate Professor, National Technical University of Athens

**Ilias Diakonikolas**

Professor, University of Wisconsin-Madison

**Paul G. Spirakis**

Professor, University of Liverpool