Vasilis Kontonis

Web: https://vkonton.github.io

Mail: vkonton@gmail.com Cell: +1 (608) 982-4267 University of Texas at Austin Department of Computer Sciences 2317 Speedway, Austin, TX, USA

Education University of Wisconsin-Madison

Ph.D., Computer Science, 2018 – 2023.

Thesis: Learning From Imperfect Data: Noisy Labels, Truncation, and Coarsening

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 University of Texas at Austin

IFML Postdoctoral Fellow, 2023 – present.

Research Intern Google Research

2022, Google Research, Mountain View, California

Systems and Services Engineer GRNET

2016, Greek Research and Technology Network, Athens

Research Interests Machine Learning, Statistics, Theoretical Computer Science

Publications¹ Conference Proceedings

Smoothed Analysis for Learning Concepts with Low Intrinsic Dimension

Gautam Chandrasekaran, Adam Klivans, Vasilis Kontonis,

Raghu Meka, Konstantinos Stavropoulos

Proceedings of the 37th Annual Conference on Learning Theory

Best Paper Award

COLT 2024

Active Learning with Simple Questions

Vasilis Kontonis, Mingchen Ma, Christos Tzamos

Proceedings of the 37th Annual Conference on Learning Theory

COLT 2024

Agnostically Learning Multi-index Models with Queries

Ilias Diakonikolas, Daniel M. Kane, Vasilis Kontonis,

¹Author names are in alphabetical order unless otherwise. Only publications in peer-reviewed conferences and journals are included.

Christos Tzamos, Nikos Zarifis

Proceedings of the 65th Annual Symposium on Foundations of Computer Science FOCS 2024

Super Non-singular Decompositions of Polynomials and their Application to Robustly Learning Low-degree PTFs

Ilias Diakonikolas, Daniel M Kane, Vasilis Kontonis,

Sihan Liu, Nikos Zarifis

Proceedings of the 56th Annual ACM Symposium on Theory of Computing STOC 2024

Active Classification with Few Queries under Misspecification

Vasilis Kontonis, Mingchen Ma, Christos Tzamos

Proceedings of the 38th Conference on Neural Information Processing Systems Spotlight Presentation

NeurIPS 2024

Learning Noisy Halfspaces with a Margin:

Massart is no Harder than Random

Gautam Chandrasekaran, Vasilis Kontonis, Kostas Stavropoulos, Kevin Tian Proceedings of the 38th Conference on Neural Information Processing Systems Spotlight Presentation

NeurIPS 2024

Efficient Discrepancy Testing for Learning with Distribution Shift

Gautam Chandrasekaran, Adam Klivans Vasilis Kontonis,

Kostas Stavropoulos, Arsen Vasilyan

Proceedings of the 38th Conference on Neural Information Processing Systems NeurIPS 2024

Optimizing Solution-Samplers for Combinatorial Problems: The Landscape of Policy Gradient Methods

Constantinos Caramanis, Dimitris Fotakis, Alkis Kalavasis

Vasilis Kontonis, Christos Tzamos

Proceedings of the 37th Conference on Neural Information Processing Systems

Selected for Oral Presentation

NeurIPS 2023

SLaM: Student Label Mixing for Distillation with Unlabeled Examples

Vasilis Kontonis, Fotis Iliopoulos, Khoa Trinh,

Cenk Baykal, Gaurav Menghani, Erik Vee

Proceedings of the 37th Conference on Neural Information Processing Systems NeurIPS 2023

The Gain from Ordering in Online Learning

Vasilis Kontonis, Mingchen Ma, Christos Tzamos Proceedings of the 37th Conference on Neural Information Processing Systems NeurIPS 2023

Efficient Testable Learning of Halfspaces with Adversarial Label Noise

Ilias Diakonikolas, Daniel M Kane, Vasilis Kontonis,

Sihan Liu, Nikos Zarifis

Proceedings of the 37th Conference on Neural Information Processing Systems NeurIPS 2023

Self Directed Linear Classification

Ilias Diakonikolas, Vasilis Kontonis, Christos Tzamos, Nikos Zarifis Proceedings of the 36th Annual Conference on Learning Theory COLT 2023

Weighted Distillation with Unlabeled Examples

Fotis Iliopoulos, Vasilis Kontonis, Cenk Baykal, Gaurav Menghani, Khoa Trinh, Erik Vee Proceedings of the 36th Conference on Neural Information Processing Systems NeurIPS 2022

Linear Label Ranking with Bounded Noise

Dimitris Fotakis, Alvertos Kalavasis, Vasilis Kontonis, Christos Tzamos Proceedings of the 36th Conference on Neural Information Processing Systems Selected for Oral Presentation NeurIPS 2022

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 Statitistics with Unknown Truncation

Vasilis Kontonis, Christos Tzamos, Manolis Zambetakis Proceedings of the 60th Annual IEEE Symposium on Foundations of Computer Science, FOCS 2019

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

Journal

Opinion Dynamics with Limited Information

Dimitris Fotakis, Vardis Kandiros, Vasilis Kontonis, and Stratis Skoulakis Algorithmica 85, no. 12 (2023): 3855-3888

Smoothed Analysis for Learning Concepts with Low Intrinsic Dimension

Gautam Chandrasekaran, Adam Klivans, Vasilis Kontonis, Raghu Meka, Konstantinos Stavropoulos TheoretiCS (2024), (Invited)

Agnostically Learning Multi-index Models with Queries

Ilias Diakonikolas, Daniel M. Kane, Vasilis Kontonis, Christos Tzamos, Nikos Zarifis SIAM Journal on Computing, Special Issue for FOCS 2024 (Invited)

Teaching

Spring 2023, National Technical University of Athens

"Online Learning and Bandits"

Instructors: Constantine Caramanis, Vasilis Kontonis

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 Techincal University of Athens

Teaching Assistant, "Operating Systems" Instructors: Nectarios Koziris, Georgios Goumas, Vangelis Koukis

Service

Program Committees

ITCS 2025

Conference Reviewer

STOC 2025, FOCS 2024, STOC 2024, NeurIPS 2023, ICML 2022, 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 Gaussian Mixtures with Efficient Score Matching 2024, IFML/MPG Symposium, Simons Institute, UC Berkeley

Learning from Noisy Labels: Beyond Worst Case Models

2024, UC Santa Cruz, Computer Science and Engineering Colloquium 2024, New Directions in Machine Learning Theory Workshop, BIRS, Canada

Learning from Noisy Labels and Imperfect Teachers

2024, UC San Diego, EnCORE Presentation 2023, UT Austin, IFML Seminar

Smoothed Analysis for Learning Concepts with Low Intrinsic Dimension

2024, COLT, Best Paper Award Talk

2024, EnCORE Workshop on Computational vs Statistical

Gaps in Learning and Optimization, UCLA

2024, Theory Seminar, USC

2024, Theory Seminar, University of Texas at Austin

Optimizing Solution-Samplers for Combinatorial Problems

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

SLaM: Student-Label Mixing for Distillation with Unlabeled Examples

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

Linear Label Ranking with Bounded Noise

2022, 36th Conference on Neural Information Processing Systems (NeurIPS 2022)

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

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 (NerurIPS 2020)

Learning Halfspaces with Massart Noise

Under Structured Distributions

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

Truncated Statistics with Unknown Truncation

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

2019, Workshop on Algorithms for Learning and Economics (WALE 2019)

2019, 14th Athens Colloquium on Algorithms and Complexity (ACAC 2019) 2019, Theory Seminar, 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 Best Paper Award

at Conference on Learning Theory (COLT) 2024, Edmonton, CA

"Smoothed Agnostic Learning of Concepts with Low-Intrinsic Dimension"

Recipient of the Bodossakis Fellowship 2022

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)

Pytorch, Tensorflow, Mathematica, Python, LATEX, GNU/Linux