Thanasis Pittas

Website: https://thanasispittas.github.io ◇ Email: pittas.than@gmail.com

RESEARCH INTERESTS

Foundations of Machine Learning, High-Dimensional Statistics

EDUCATION

University of Wisconsin-Madison   Aug 2020 - now
Ph.D. in Computer Science
Advisor: Ilias Diakonikolas

University of Wisconsin-Madison   Aug 2020 - May 2024
MSc in Computer Science
GPA: 4.0/4
Thesis: Statistical Query Lower Bounds for Learning Truncated Gaussians
Advisor: Ilias Diakonikolas

National Technical University of Athens   Sep 2014 - Nov 2019
Diploma in Electrical and Computer Engineering
GPA: 9.64/10 (*4th out of 289*)
Thesis: Estimation of Graph Parameters from Noisy Samples and Queries
Advisor: Dimitris Fotakis

EMPLOYMENT

Applied Scientist Intern   May 2025 - Aug 2025
Amazon Web Services, Santa Clara, California
Mentor: Balakrishnan (Murali) Narayanaswamy

Graduate Assistant, University of Wisconsin-Madison   Aug 2020 - now
Research and Teaching Assistant

PUBLICATIONS*

*Author names are listed in alphabetical order unless specified otherwise.

PTF Testing Lower Bounds for Non-Gaussian Component Analysis
IIlias Diakonikolas, Daniel M. Kane, Sihan Liu, Thanasis Pittas
FOCS 2025

Optimal Robust Estimation under Local and Global Corruptions: Stronger Adversary and Smaller Error
Thanasis Pittas, Ankit Pensia (Author names in random order)
COLT 2025

On Learning Parallel Pancakes with Mostly Uniform Weights
Ilias Diakonikolas, Daniel M. Kane, Sushrut Karmalkar, Jasper C.H. Lee, Thanasis Pittas
ICML 2025 (***Spotlight Poster***)

Batch List-Decodable Linear Regression via Higher Moments
IIlias Diakonikolas, Daniel M. Kane, Sushrut Karmalkar, Sihan Liu, Thanasis Pittas
ICML 2025

Efficient Multivariate Robust Mean Estimation Under Mean-Shift Contamination
Ilias Diakonikolas, Giannis Iakovidis, Daniel M. Kane, Thanasis Pittas
ICML 2025

On Fine-Grained Distinct Element Estimation
Ilias Diakonikolas, Daniel M. Kane, Jasper C.H. Lee, Thanasis Pittas, David Woodruff, Samson Zhou
ICML 2025

Entangled Mean Estimation in High-Dimensions
Ilias Diakonikolas, Daniel M. Kane, Sihan Liu, Thanasis Pittas
STOC 2025

Clustering Mixtures of Bounded Covariance Distributions Under Optimal Separation
Ilias Diakonikolas, Daniel M. Kane, Jasper C. H. Lee, Thanasis Pittas
SODA 2025

Robust Sparse Estimation for Gaussians with Optimal Error under Huber Contamination
Ilias Diakonikolas, Daniel M. Kane, Sushrut Karmalkar, Ankit Pensia, Thanasis Pittas
ICML 2024

Statistical Query Lower Bounds for Learning Truncated Gaussians
Ilias Diakonikolas, Daniel M. Kane, Thanasis Pittas, Nikos Zarifis
COLT 2024

Near-Optimal Algorithms for Gaussians with Huber Contamination: Mean Estimation and Linear Regression
Ilias Diakonikolas, Daniel M. Kane, Ankit Pensia, Thanasis Pittas
NeurIPS 2023

A Spectral Algorithm for List-Decodable Covariance Estimation in Relative Frobenius Norm
Ilias Diakonikolas, Daniel M. Kane, Jasper C.H. Lee, Ankit Pensia, Thanasis Pittas
NeurIPS 2023 (***Spotlight Presentation***)

SQ Lower Bounds for Learning Mixtures of Separated and Bounded Covariance Gaussians
Ilias Diakonikolas, Daniel M. Kane, Thanasis Pittas, Nikos Zarifis
COLT 2023

Nearly-Linear Time and Streaming Algorithms for Outlier-Robust PCA
Ilias Diakonikolas, Daniel M. Kane, Ankit Pensia, Thanasis Pittas
ICML 2023

List-Decodable Sparse Mean Estimation via Difference-of-Pairs Filtering
Ilias Diakonikolas, Daniel M. Kane, Sushrut Karmalkar, Ankit Pensia, Thanasis Pittas
NeurIPS 2022 (***Oral Presentation***)

Robust Sparse Mean Estimation via Sum of Squares
Ilias Diakonikolas, Daniel M. Kane, Sushrut Karmalkar, Ankit Pensia, Thanasis Pittas
COLT 2022

Streaming Algorithms for High-Dimensional Robust Statistics
Ilias Diakonikolas, Daniel M. Kane, Ankit Pensia, Thanasis Pittas
ICML 2022

Statistical Query Lower Bounds for List-Decodable Linear Regression
Ilias Diakonikolas, Daniel M. Kane, Ankit Pensia, Thanasis Pittas, Alistair Stewart
NeurIPS 2021 (***Spotlight Presentation***)

The Optimality of Polynomial Regression for Agnostic Learning under Gaussian Marginals in the SQ Model
Ilias Diakonikolas, Daniel M. Kane, Thanasis Pittas, Nikos Zarifis
COLT 2021

Estimating the Number of Induced Subgraphs from Incomplete Data and Neighborhood Queries
Dimitris Fotakis, Thanasis Pittas, Stratis Skoulakis
AAAI 2021

Awards

Research Assistant Sponsorship by the Institute for Foundations of Data Science (IFDS)	2021, 2023, 2024
Student Research Grants Competition (SRGC) Award	Fall 2023
Bodossaki Foundation Scholarship	2022 - 2025
Gerondelis Foundation Scholarship	2021
UW-Madison CS Departmental Research Fellowship	2020 - 2021

Teaching

Teaching Assistant at UW-Madison

CS400 (Programming III)	Spring 2024, Spring 2025, Fall 2025
CS540 (Introduction to Artificial Intelligence)	Spring 2022

Grader at UW-Madison

CS639 (Introduction to Computational Learning Theory)	Fall 2023, Fall 2024

Teaching Assistant at NTUA

Discrete Mathematics	Spring 2019
Algorithms and Complexity	Fall 2019
Introduction to Computer Programming	Fall 2018

Talks

Clustering Mixtures of Bounded Covariance Distributions Under Optimal Separation — October 2024
Theory seminar at UW-Madison

Statistical Query Lower Bounds for Learning Truncated Gaussians — July 2024
Conference on Learning Theory (COLT) 2024, Edmonton, Canada

Nearly-Linear Time and Streaming Algorithms for Outlier-Robust PCA — October 2023
Institute for Operations Research and the Management Sciences (INFORMS) 2023, Phoenix, Arizona

Near-Optimal Algorithms for Robust Statistics — November 2023
Institute for Foundations of Data Science (IFDS), Madison, Wisconsin

Robust Sparse Mean Estimation via Sum of Squares — July 2022
Conference on Learning Theory (COLT) 2022, London, UK

Streaming Algorithms for High-Dimensional Robust Statistics — February 2022
Institute for Foundations of Data Science (IFDS), Madison, Wisconsin

Service (Reviewer)

Innovations in Theoretical Computer Science (ITCS): 2025
Conference on Algorithmic Learning Theory (ALT): 2025
Symposium on Theory of Computing (STOC): 2025
Neural Information Processing Systems (NeurIPS): 2022, 2023, 2024, 2025
International Conference on Machine Learning (ICML): 2022, 2024
International Colloquium on Automata, Languages and Programming (ICALP): 2024
International Conference on Learning Representations (ICLR): 2023
SIAM Journal on Mathematics of Data Science (SIMODS): 2024

Leadership Experience

WISCERS: Program for mentoring undergrad students	Spring 2022, Spring 2023, Fall 2024

Technical Skills

Pytorch, Python, Mathematica, MATLAB, LaTeX