Konstantinos (Kostas) Zampetakis

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Contact

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Research Interests

Probabilistic Combinatorics, Counting/Sampling Algorithms,
Random Structures and Phase Transitions,
Inference in Graphical Models, Correlation Inequalities.

Employment

Technische Universität Dortmund, Germany
Postdoctoral Researcher in the Department of Computer Science *2024 – present*

The University of Warwick, United Kingdom
Research Fellow in the Department of Computer Science *2022 – 2024*

University of California, Santa Cruz, USA
Teaching & Research Assistant in the Department of Computer Science *2016 – 2022*

Education

University of California, Santa Cruz, USA

PhD in Computer Science and Engineering *2018 – 2022*

- *Supervisor* : Seshadhri Comandur
- *Thesis* : Local Bounds for the Independent Set Polynomial and the Probabilistic Method
- *Grade* : 4.0/4.0

MSc in Computer Science *2016 – 2018*

- *Thesis* : A New Look at the Lovász Local Lemma
- *Grade* : 4.0/4.0

University of Athens, Greece

Diploma in Mathematics *2010 – 2015*

- *Emphasis* : Pure Mathematics
- *Grade* : 8.69/10 (“Excellent”)

Awards

Best TA Award of Computer Science, UC Santa Cruz *2018*

Scholarship University of California Regents *2016*

Papers

Authors are listed alphabetically, as is the convention in theoretical computer science.

Preprints

- **On sampling diluted Spin-Glasses with unbounded interactions**
  with: Charilaos Efthymiou *2026*
  arXiv:2603.22432
- **Fluctuations of the Ising free energy on Erdős-Rényi graphs**
  with: Amin Coja-Oghlan, Dominik Kaaser, Maurice Rolvien, Pavel Zakharov *2026*
  arXiv:2601.08590
- **The Lovász Local Lemma is Not About Probability**
  with: Dimitris Achlioptas *2021*
  arXiv:2111.08837

Publications

1. **The random *k*-SAT Gibbs uniqueness threshold revisited**
   with: Arnab Chatterjee, Amin Coja-Oghlan, Catherine Greenhill, Vincent Pfenninger, Maurice Rolvien, Pavel Zakharov ***CPC*** *2026*
   Combinatorics, Probability and Computing 35(4):433–485 • DOI • arXiv:2506.01359
2. **On sampling diluted Spin-Glasses using Glauber Dynamics**
   with: Charilaos Efthymiou ***COLT*** *2024*
   PMLR 247:1501–1515 • arXiv:2403.08921
3. **Bounding Weakly Correlated Products from Below: Supermodularity is All You Need**
   with: Dimitris Achlioptas ***ISIT*** *2024*
   Pages 3035–3040 • DOI
4. **Broadcasting with Random Matrices**
   with: Charilaos Efthymiou ***ICALP*** *2023*
   LIPIcs 261, 55:1–55:14 • DOI • arXiv:2302.11657
5. **A Simpler Proof of the Four Functions Theorem and Some New Variants**
   with: Dimitris Achlioptas ***ISIT*** *2022*
   Pages 714–717 • DOI
6. **Local Approximations of the Independent Set Polynomial**
   with: Dimitris Achlioptas ***ICALP*** *2021*
   LIPIcs 198, 8:1–8:16 • DOI

Teaching

Lecturer, ***TU Dortmund:***

INF-MSc-241 *Linear Programming and Combinatorial Optimization* — *2025 Fall*

Teaching Assistant, ***University of Warwick:***

CS146 *Discrete Mathematics and its Applications* — *2022 Fall*

Teaching Assistant, ***UC Santa Cruz:***

CSE 103 *Computational Models* — *2021 Fall & 2020 Spring*
CSE 202 *Combinatorial Algorithms* — *2021 Spring*
CSE 16 *Applied Discrete Mathematics* — *2020 Fall*
CMPS 101 *Algorithms and Abstract Data Types* — *2018 Fall*
CMPS 102 *Introduction to Analysis of Algorithms* — *2018 Spring & 2017 Winter*

Service

Organization:

ADYN Summer School on Algorithms, Dynamics, and Information Flow in Networks
Möhnesee, Germany — *June 2026*

Athens-Dortmund-Hamburg Workshop on Graphs, Networks, Optimization, and Statistical Inference
Corfu, Greece — *March 2026*

WALE 2024: Workshop on Algorithms for Learning and Economics
Kefalonia, Greece — *June 2024*

Reviewing:

Conferences: STOC, SODA, RANDOM, ALT
Journals: SICOMP, TALG

Technical Skills

Programming Languages: C/C++, Python, Java
Mathematical Software: MATLAB, Mathematica, Maple, SAGE