ALEXEY GORDEEV

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EDUCATION

Ph.D.: St.Petersburg Department of V.A. Steklov Institute (PDMI RAS)   2017 – 2022
Mathematics   Thesis title: Applications of polynomial method in combinatorics

Specialist degree (equiv. B.Sc.+M.Sc.): Saint Petersburg State University   2012 – 2017
Fundamental Mathematics and Mechanics   Thesis title: Applications of polynomial method to Dyson-type identity

RESEARCH POSITIONS AND VISITS

Umeå University, Department of Mathematics and Mathematical Statistics   2023 – 2025
Postdoctoral Researcher   Umeå, Sweden

EPFL, Bernoulli Center for Fundamental Studies   August 19 – September 13, 2024
Long-term research stay   Lausanne, Switzerland

Bulgarian Academy of Sciences, Institute of Mathematics and Informatics   June 2023
Visiting Researcher   Sofia, Bulgaria

The Euler International Mathematical Institute   2019 – 2022
Junior Researcher   Saint Petersburg, Russia

GRANTS

Momentum Marie Skłodowska-Curie Actions Postdoctoral Fellowship   2025

PUBLICATIONS

A. Gordeev, K. Markström, L.D. Öhman, *Near triple arrays.* https://arxiv.org/abs/2503.07166, 2025. To appear in Journal of Combinatorial Theory, Series A.

A. Gordeev, *Combinatorial Nullstellensatz and Turán numbers of complete r-partite r-uniform hypergraphs.* Discrete Mathematics, 347(7), 114037, 2024.

D. Cherkashin, **A. Gordeev**, G. Strukov, *Erdős–Hajnal problem for H-free hypergraphs.* Graphs and Combinatorics, 40(1), 1–15, 2024.

A. Gordeev, Y. Teplitskaya, *On regularity of maximal distance minimizers in $\mathbb{R}^n$.* Annali della Scuola Normale di Pisa - Classe di Scienze, 2023. In press, https://doi.org/10.2422/2036-2145.202208_004.

A. Gordeev, Z. Li, F. Petrov, Z. Shao, *The Alon–Tarsi Number of A Toroidal Grid.* European Journal of Combinatorics, 111, 103697, 2023.

D. Cherkashin, **A. Gordeev**, *On list chromatic numbers of 2-colorable hypergraphs.* Proceedings of MIPT, 14(1), 49–57, 2022.

A. Gordeev, F. Petrov, *Alon–Tarsi numbers of direct products.* Moscow Journal of Combinatorics and Number Theory 10(4), 271–279, 2021.

A. Gordeev, *Constant terms of near-Dyson polynomials.* The Electronic Journal of Combinatorics 25(4), 2018.

PREPRINTS

A.S. Árnadóttir, **A. Gordeev**, S. Lato, T. Randrianarisoa, J. Vermant, *Cayley incidence graphs.* https://arxiv.org/abs/2411.19428, 2024.

D. Cherkashin, **A. Gordeev**, G. Strukov, Y. Teplitskaya, *Maximal distance minimizers for a rectangle.* https://arxiv.org/abs/2106.00809, 2021.

D. Cherkashin, **A. Gordeev**, G. Strukov, Y. Teplitskaya, *On minimizers of the maximal distance functional for a planar convex closed smooth curve.* https://arxiv.org/abs/2011.10463, 2020.

SELECTED TALKS

"A Christofides-based approach to the travelling salesman problem in the unit cube"
Eurocomb'25, Budapest, Hungary   August 28, 2025

"Near triple arrays"
Eurocomb'25, Budapest, Hungary   August 25, 2025

"Combinatorial Nullstellensatz and the Erdős box problem"
Synergies of combinatorics and theoretical computer science, Lausanne, Switzerland   August 19, 2024

"New non-extremal triple arrays"
30th British Combinatorial Conference, London, UK   July 3, 2024

"Planar bubble cluster. Connectivity and other problems"
Conference of Small Research Groups, Saint Petersburg, Russia   December 1, 2021

"On list chromatic numbers of 2-colorable hypergraphs"
Groups and Graphs, Semigroups and Synchronization, Sochi, Russia, online talk   August 13, 2021

"Constant terms of near-Dyson polynomials"
The Second Alan Turing Contest, Saint Petersburg, Russia   June 29, 2017

WORKSHOPS

Synergies of Combinatorics and Theoretical Computer Science   August 19 – August 23, 2024
Lausanne, Switzerland

Discrete math and Geometry Research Symposium (DiGResS)   May 27 – May 29, 2024
Umeå, Sweden

Workshop on Open Problems in Combinatorics and Geometry   October 13 – 19, 2019
Adygea, Russia

3rd Hungarian-Russian Combinatorics workshop   May 20 – 25, 2019
Moscow and Petrozavodsk, Russia

TEACHING

Lecturer (Algorithms and Data Structures)   *Saint Petersburg State University*

Algorithms and Data Structures I   Fall 2019, Spring 2021
Algorithms and Data Structures II   Spring 2019, Spring 2020, Fall 2021
Algorithms and Data Structures III   Fall 2019, Fall 2020

Teacher (Algorithms and Data Structures)   *Summer Informatics Camp, Perm, Russia*

3 week course with lectures and practice sessions   August 2013 – 2019, September 2021

ACADEMIC AND COMMUNITY SERVICE

Reviewed for SIAM Journal on Discrete Mathematics, Combinatorica, Discrete Mathematics, Journal of Combinatorial Designs, Discussiones Mathematicae Graph Theory, etc.

Gave a lecture and held a training contest for the Bulgarian IOI team   July 2023

Supervised "Steiner trees" track at the Research School in Mathematics and Computer Science for high school students in Sirius, Russia   January 2022

Took part in organizing Summer Informatics Camp in Perm, Russia   2013–19, 2021

OTHER EMPLOYMENT

WorldQuant Research (Eurasia), Saint Petersburg Research Office   2017 – 2019
Quantitative Researcher

ACHIEVEMENTS IN COMPETITIONS

World Champion, ACM ICPC World Finals   2016
Gold Medal, International Olympiad in Informatics   2012
Winner's Diploma, Russian National Olympiad in Informatics   2011, 2012
Winner's Diploma, Russian National Olympiad in Mathematics   2010

PROGRAMMING SKILLS

C++, Python, SageMath