

ALEXEY GORDEEV

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EDUCATION

Ph.D.:

St.Petersburg Department of V.A.Steklov Institute of Mathematics 2017 – 2022
of the Russian Academy of Sciences (PDMI RAS)

Mathematics

Thesis title: Applications of polynomial method in combinatorics

Specialist degree (equivalent to B.Sc. + M.Sc.):

Saint Petersburg State University 2012 – 2017

Fundamental Mathematics and Mechanics

Thesis title: Applications of polynomial method to Dyson-type identity

Advisor: Fedor Petrov

RESEARCH POSITIONS

The Euler International Mathematical Institute November 2019 – December 2022

Saint Petersburg, Russia

Junior Researcher

RESEARCH INTERESTS

list colorings of graphs and hypergraphs, polynomial method in combinatorics, extremal hypergraph problems, maximal distance minimizers

PUBLICATIONS

Z. Li, Z. Shao, F. Petrov, **A. Gordeev**, *The Alon–Tarsi Number of A Toroidal Grid*, <https://doi.org/10.1016/j.ejc.2023.103697>, European Journal of Combinatorics, 103697, 2023. arXiv version: <https://arxiv.org/abs/1912.12466>.

D. Cherkashin, **A. Gordeev**, *On list chromatic numbers of 2-colorable hypergraphs*, <https://mipt.ru/upload/medialibrary/745/05.pdf>, Proceedings of MIPT, 14(1), 49–57, 2022. arXiv version: <https://arxiv.org/abs/2102.02746>.

F. Petrov, **A. Gordeev**, *Alon–Tarsi numbers of direct products*, <https://doi.org/10.2140/moscow.2021.10.271>, Moscow Journal of Combinatorics and Number Theory 10(4), 271–279, 2021. arXiv version: <https://arxiv.org/abs/2007.07140>.

A. Gordeev, *Constant terms of near-Dyson polynomials*, <https://doi.org/10.37236/7087>, The Electronic Journal of Combinatorics 25(4), 2018.

PREPRINTS

A. Gordeev, Y. Teplitskaya, *On regularity of maximal distance minimizers in Euclidean Space*, <https://arxiv.org/abs/2207.13745>, 2022, submitted.

D. Cherkashin, **A. Gordeev**, G. Strukov, *Erdős–Hajnal problem for H -free hypergraphs*, <https://arxiv.org/abs/2207.05840>, 2022, submitted.

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

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, submitted.

TEACHING

Teaching as a Lecturer at Saint Petersburg State University

a 3 semester undergraduate course on algorithms and data structures

“Modern Programming” Bachelor programme

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

Teaching to high school students at Summer Informatics Camp

a 3 week course with lectures and practice sessions on algorithms and data structures

Perm, Russia, <https://sicamp.ru>

August 2013 – 2019, September 2021

TALKS

“Planar bubble cluster. Connectivity and other problems”	December 1, 2021
<i>Conference of Small Research Groups (Saint Petersburg, Russia)</i>	
“On list chromatic numbers of 2-colorable hypergraphs”	August 13, 2021
<i>Groups and Graphs, Semigroups and Synchronization (the talk was given online via zoom)</i>	
“Proof of the List Coloring Conjecture for line perfect graphs”	May 14, 2019
<i>Conference on Graphs, Networks, and Their Applications (Moscow, Russia)</i>	
“Constant terms of near-Dyson polynomials”	June 29, 2017
<i>TuCo 2017 (Saint Petersburg, Russia)</i>	

PARTICIPATION IN EVENTS

Conference of Small Research Groups	November 29 – December 2, 2021
<i>Saint Petersburg, Russia</i>	
Groups and Graphs, Semigroups and Synchronization	August 9 – 13, 2021
<i>Sirius Mathematics Center, Sochi, Russia</i>	
International School-conference in Algorithms, Combinatorics, and Complexity	May 24 – 28, 2021
<i>Saint Petersburg, Russia (was held online)</i>	
Workshop on Open Problems in Combinatorics and Geometry	October 13 – 19, 2019
<i>Adygea, Russia</i>	
3rd Hungarian-Russian Combinatorics workshop	May 20 – 25, 2019
<i>Moscow, Petrozavodsk, Russia</i>	
Conference on Graphs, Networks, and Their Applications	May 13 – 18, 2019
<i>Moscow, Russia</i>	
The Second Alan Turing Contest in Theoretical Computer Science and Discrete Mathematics for Russian-speaking students (TuCo 2017)	June, 2017
<i>Saint Petersburg, Russia</i>	

ACADEMIC AND COMMUNITY SERVICE

Reviewed papers for: SIAM Journal on Discrete Mathematics, Combinatorica, etc.

Took part in organizing the Summer Informatics Camp in Perm, Russia (<https://sicamp.ru>) in 2013–19 and 2021

Supervised “Steiner trees” track during the Science School in Mathematics and Computer Science for high school students in Sirius, Sochi, Russia in January 2022

OTHER EMPLOYMENT

WorldQuant Research (Eurasia), Saint Petersburg
Research Office
Quantitative Researcher

October 2017 – April 2019

ACHIEVEMENTS

VK Cup 2018
Awardee, 8th absolute place

Google Hash Code 2017
Finalist

ACM ICPC World Finals 2016
World champion as part of SPbSU team

International Olympiad in Informatics 2013
Gold medal, 20th absolute place

PROGRAMMING SKILLS

C++, Python, SageMath