Boris Zolotov

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Research Interests

Theoretical computer science: algorithms, data structures, computational geometry, automated proof systems

Education

2021–present **Ph. D. student,** St. Petersburg State University, Department of Mathematics and Computer Sciences, **Researcher / Engineer,** Euler International Mathematical Institute

2019–2021 **MSc,** St. Petersburg State University, Department of Mathematics and Computer Sciences, „Advanced Mathematics“ MSc programme

Title Algorithms for Dynamic Voronoi Diagrams
Supervisor Candidate of Physics and Mathematics E. A. Arseneva
Grade Excellent

2015–2019 **BSc,** St. Petersburg State University, Department of Mathematics and Computer Sciences, „Mathematics“ BSc programme, bachelor's thesis:

Title Algorithmic Aspects of Alexandrov's Uniqueness Theorem
Supervisor Candidate of Physics and Mathematics E. A. Arseneva
Grade Excellent

Student exchanges and internships

10.2020 — 01.2021 ULB, Brussels, Master en sciences informatiques, Faculté des Sciences (via competitive selection at SPBU)

Courses

`Info-F409` Learning Dynamics
`Info-F420` Computational Geometry
`Info-F521` Graphs and Networks
`Info-F413` Data Structures and Algorithms
`Math-F513` Riemann Surfaces
`Info-Y085` Functional Programming

Grants

January 2020–present — Russian Foundation for Basic Research (RFBR), participant. Project title: Problems on the Border of Combinatorics and Computational Geometry

September 2019–present — 2019 competition of the Foundation for the Advancement of Theoretical Physics and Mathematics „BASIS“, participant

Teaching experience

01.–05.2023 — **Seminars in Theoretical Computer Science,** II semester undergraduates, SPbU

09.–12.2022 — **Seminars in Logic,** V semester undergraduates, SPbU

2016–present — **Supervisor of the project,** „Mathematics Non-Stop“, Time for Science foundation

2015–present — Additional courses **tutor**, Laboratory for Continuous Mathematical Education, St. Petersburg

2015–present — **Supervisor** of research projects for the youth, Laboratory for Continuous Mathematical Education, St. Petersburg

2015–present — Summer school courses **tutor**, Laboratory for Continuous Mathematical Education, St. Petersburg

2018–2022 — Mathematics for Olympiads **tutor,** „Fractal“, St. Petersburg

Schools and workshops

June 2019 — Second Trans-Siberian Workshop on Computational Geometry and Data Structures

November 2016 — Winter School on cubic plane curves, HSE, Moscow

Community service

August 2021	**Volunteer,** Conference of International Mathematical Centers
August 2021	**Volunteer,** XX-th International Congress on Mathematical Physics and Young Researchers Symposium
April 2021	**Local organising committee** of EuroCG 2021
April 2018 — 2019	**Assistant TEX-er** of Joint Projects of PJSC Gazprom Neft and Chebyshev Laboratory
2016–present	**Organising committee and jury,** Saint Petersburg tournaments of young mathematicians
02.2018, 2019, 2020	**Jury,** Baltic Science And Engineering Fair

Books and Brochures (in Russian)

February 2019	Б. А. Золотов, Д. Г. Штукенберг, И. А. Чистяков, А. В. Семенов, И. С. Алексеев, *Сборник задач олимпиады «Математика НОН-СТОП»,* 373 с., ISBN 978-5-906623-38-6
December 2019	Б. А. Золотов, Д. Г. Штукенберг, *Математика НОН-СТОП—2019. Решения задач олимпиады,* 72 с., ISBN 978-5-906623-47-8
December 2020	Б. А. Золотов, Е. И. Тодоров, Д. Г. Штукенберг, *Математика НОН-СТОП—2020. Решения задач олимпиады,* 80 с., ISBN 978-5-6045675-2-4

Publications and Conferences

[1] Elena Arseneva, John Iacono, Greg Koumoutsos, Stefan Langerman, and Boris Zolotov. Sublinear Explicit Incremental Planar Voronoi Diagrams. In *The 22-nd Japan Conference on Discrete and Computational Geometry, Graphs, and Games*, pages 33–34, September 2019.

[2] Elena Arseneva, John Iacono, Grigorios Koumoutsos, Stefan Langerman, and Boris Zolotov. Sublinear Explicit Incremental Planar Voronoi Diagrams. *Journal of Information Processing*, 28:766–774, 2020.

[3] Elena Arseneva, Stefan Langerman, and Boris Zolotov. A Complete List of All Convex Polyhedra Made by Gluing Regular Pentagons. In *The 22-nd Japan Conference on Discrete and Computational Geometry, Graphs, and Games*, pages 33–34, September 2019.

[4] Elena Arseneva, Stefan Langerman, and Boris Zolotov. A complete list of all convex polyhedra made by gluing regular pentagons. In *XVIII Spanish Meeting on Computational Geometry*, pages 26–29, July 2019.

[5] Elena Arseneva, Stefan Langerman, and Boris Zolotov. A Complete List of All Convex Polyhedra Made by Gluing Regular Pentagons. *Journal of Information Processing*, 28:791–799, 2020.

[6] Stefan Langerman, Nicolas Potvin, and Boris Zolotov. Enumerating All Convex Polyhedra Glued from Squares in Polynomial Time. In *CG Week Young Researchers Forum 2021*, pages 61–64, June 2021. Based on the project prepared during an exchange semester at ULB.

[7] Stefan Langerman, Nicolas Potvin, and Boris Zolotov. Enumerating All Convex Polyhedra Glued from Squares in Polynomial Time. *arXiv.org*, April 2021.

[8] Boris Zolotov. Another Solution to the Thue Problem of Non-Repeating Words. *arXiv.org*, May 2015.

[9] Boris Zolotov. Algorithmic Aspects of Alexandrov's Uniqueness Theorem. *Bachelor's thesis at the Faculty of Mathematics and Computer Sciences, SPBU*, pages 1–31, 2019.

[10] Boris Zolotov. Algorithms for Dynamic Voronoi Diagrams. *Master's thesis at the Faculty of Mathematics and Computer Sciences, SPBU*, pages 1–29, 2021.