ALEXEY GORELOV

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In 2015 I got a specialist's degree in Applied Mathematics and Informatics at Lomonosov Moscow State University. There I studied data analysis and machine learning. My thesis work focused on developing a probabilistic model for message passing delays between nodes of a computing cluster.

After the graduation, I decided to gain practical experience in the field of data analysis so I got a job at Mail.Ru Group. There I worked on revenue predictions, planning and analysis of experiments, and so on. Also, I gained strong programming experience there (Python, Java, Hadoop).

But after several years I began to feel that my work has turned into a routine and that I really missed the beauty of mathematics. In 2019 I entered a Master's degree program in Mathematics at Higher School of Economics, and I got the Master's degree in 2021. In the same year I started my PhD program at Steklov Mathematical Institute of RAS.

I like the combining of geometrical beauty and combinatorial technics so the fields of my interest are piecewise linear topology, topological graph theory, and topological combinatorics. My 1st year course work was on the characterization of collapsible polyhedra in terms of free deformation contractibility, while my thesis work was about the problem of an existence of a lifting to an embedding of a map between graphs.

EDUCATION

PhD in Mathematics   October 2021 — Present

Steklov Mathematical Institute of Russian Academy of Sciences

Supervisor: Sergey Melikhov

M.Sc. in Mathematics (with excellence)   September 2019 — June 2021

Faculty of Mathematics,
National Research University Higher School of Economics

Supervisor: Sergey Melikhov
Thesis theme: Lifting maps between graphs to embeddings
GPA: 9.33 out of 10

Specialist's degree in Applied Mathematics and Informatics   September 2010 — June 2015

Faculty of Computational Mathematics and Cybernetics,
Lomonosov Moscow State University

Supervisor: Archil Maysuradze
Thesis theme: Анализ задержек в коммуникационной среде вычислительного кластера [Message passing delays analyses in the communication network of a computing cluster]
GPA: 4.71 out of 5

ADDITIONAL EDUCATION

Autumn school "Toric topology and combinatorics"   1—5 November 2021

Sirius Mathematics Center, Sochi, Russia

PUBLICATIONS

Geometry of collapsing and free deformation retraction   2021
Alexey Gorelov
arXiv:2103.16464 [math.GT]

Информационная модель для снятия многозначности морфемного разбора в татарском языке [Information model for morphological disambiguation in the Tatar language]   2018
Горелов А.А., Майсурадзе А.И. [Gorelov A., Maysuradze A.]

Дискретные модели в теории управляющих систем: X Международная конференция, Москва и Подмосковье, 23-25 мая 2018 : Труды, том 1, с. 104-106

Анализ структуры задержек передачи информации в вычислительном кластере [Delay structure mining in a computing cluster]   2015

А.А. Горелов, А.И. Майсурадзе, А.Н. Сальников [Gorelov A., Maysuradze A., Salnikov A.]

Proceedings of the 1st Russian Conference on Supercomputing - Supercomputing Days 2015

CONFERENCE PRESENTATIONS

Geometry of collapsing and free deformation retraction   2021
Poster presentation

Young Topologists Meeting 2021, Stockholm, Sweden (online)

Geometry of collapsing and free deformation retraction   2021
Poster presentation

Graduate Student Topology and Geometry Conference 2021, Indiana University, USA (online)

Анализ структуры задержек передачи информации в вычислительном кластере [Delay structure mining in a computing cluster]   2015
Poster presentation

Russian Supercomputing Days 2015, Moscow, Russia

Восстановление зерновых вершин графа, полученного поиском в ширину [Reconstructing the seed vertices of a graph obtained by the breadth-first search algorithm]   2013
Oral presentation

International student, postgraduate and young scientist conference "Lomonosov-2013", Moscow, Russia

TEACHING EXPERIENCE

Visiting scholar   January 2021 — April 2021

Conducting seminars for the course "Linear Algebra" for 1st year undergraduate students,
Graduate School of Business,
National Research University Higher School of Economics

Teaching assistant   January 2020 — May 2020

Course "Mathematical analysis" for 1st year undergraduate students,
Faculty of Mathematics,
National Research University Higher School of Economics

Visiting scholar   September 2019 — December 2019

Conducting seminars for the course "Algebra and Geometry" for 1st year undergraduate students,
Graduate School of Business,
National Research University Higher School of Economics

SCHOLARSHIPS AND GRANTS

Special scholarship for HSE master's students   2020 — 2021

Russian Foundation for Basic Research grant №15–07–09214   2017
(one of the participants)

SEMINAR REPORTS

Поднятие погружений до вложений в коразмерности один [Lifting immersions to embeddings in codimension one]

23 February 2022

Geometric Topology Seminar, Steklov Mathematical Institute of RAS, Moscow, Russia

Slides and recordings (in Russian).

Поднятие отображений между графами во вложение [Lifting maps between graphs to embeddings]

28 May 2021

Geometric Topology Seminar, Steklov Mathematical Institute of RAS, Moscow, Russia

Recordings (in Russian).

Аппроксимация вложениями отображений графов в плоскость [Approximation by embeddings of maps of graphs into the plane]

28 April, 2 May 2021

Geometric Topology Seminar, Steklov Mathematical Institute of RAS, Moscow, Russia

Recordings (in Russian) of the first part and the second part.

Некоторые характеризации CAT(0) кубических комплексов [Some characterizations of CAT(0) cubical complexes]

11, 18 December 2020

Geometric Topology Seminar, Steklov Mathematical Institute of RAS, Moscow, Russia

Slides and recordings (in Russian) of the first part and the second part.

The Kister-Mazur theorem

8 December 2020

Seminar on smooth, PL- and topological manifolds, Faculty of Mathematics, Moscow, Russia

Slides.

Сдавливание и свободная деформационная ретракция [Collapsing and free deformation retraction]

5 June 2020

Seminar of International Laboratory of Algebraic Topology and Its Applications, Faculty of Computer Sciences of HSE, Moscow, Russia

Сдавливание и свободная деформационная ретракция [Collapsing and free deformation retraction]

13 May 2020

Geometric Topology Seminar, Steklov Mathematical Institute of RAS, Moscow, Russia

Slides and recordings (in Russian).

Медианные пространства и выпуклые структуры [Median spaces and convex structures]

11 December 2019

Geometric Topology Seminar, Steklov Mathematical Institute of RAS, Moscow, Russia

Slides and recordings (in Russian).

STUDENT OLYMPIADS PARTICIPATION

HSE Olympiad competition for students and graduates, track "Mathematics"

2019

II degree diploma

WORK EXPERIENCE

Mail.ru Group

September 2015 — October 2019

Data analyst and data scientist in Mail.ru Search

OTHER EDUCATION

Creative Writing School
October 2015 — December 2015

Poetry workshop, supervised by Dmitry Bykov

PROFESSIONAL SKILLS

Programming languages

Working knowledge: Python, Java, bash, C
Basic knowledge: C++, Matlab, R, Go, Kotlin, C#

Software and technologies

GNU/Linux (I've been working with GNU/Linux since 2008), Python scientific stack (numpy, scipy, sympy, matplotlib), Hadoop, Matlab, VCS

Languages

Russian: native speaker
English: upper intermediate