

Ludmila Glinskih

PhD Candidate at Boston University
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Education

- Boston University 2019 – present
PhD (in progress), *Computer Science*
M.Sc., *Computer Science*
Advisors: Dr. Sofya Raskhodnikova and Dr. Mark Bun
GPA: 3.97
- St. Petersburg Academic University of Russian Academy of Sciences 2015 – 2017
M.Sc., *Theoretical Computer Science*
Thesis: “Satisfiable Tseitin formulas are hard for nondeterministic read-once branching programs”
- Peter the Great Saint-Petersburg Polytechnic University 2009 – 2014
B.Sc., *Applied Mathematics and Computer Science*

Research Positions

- Tumult Labs** May 2023 – Aug 2023
Scientist Intern
Conducted research on differential private algorithms.
- Simons Institute for the Theory of Computing** Jan 2023 – May 2023
Visiting Researcher
Participated in a special semester on Meta-Complexity. Conducted research in circuit and structural complexity.
- St. Petersburg Department of V.A. Steklov Institute of Mathematics RAS** Oct 2017 – Sep 2019
Graduate Researcher (*Laboratory of Mathematical Logic*)
Conducted research in circuit and proof complexity.

Publications

- MCSP is Hard for Read-Once Nondeterministic Branching Programs*
Ludmila Glinskih and Artur Riazanov
LATIN 2022
- The Complexity of Verifying Boolean Programs as Differentially Private*
Mark Bun, Marco Gaboardi, Ludmila Glinskih
IEEE CSF 2022
- On Tseitin Formulas, Read-Once Branching Programs and Treewidth*
Ludmila Glinskih, Dmitry Itsykson
CSR 2019, **Best Paper Award winner**, invited to special issue of Theory of Computing Systems
- Satisfiable Tseitin formulas are hard for nondeterministic read-once branching programs*
Ludmila Glinskih and Dmitry Itsykson
MFCS 2017

Scholarships and Awards

TCS for All Travel Scholarship To participate in the ACM STOC 2023	June 2023
Early-Career AMS-NSF-Simons-ICM Travel Grant To participate in the International Congress of Mathematicians	July 2022
Dean's Fellowship Awarded to PhD students at Boston University	Fall 2019
CSR 2019 Best Paper Award Paper: <i>On Tseitin Formulas, Read-Once Branching Programs and Treewidth</i> Ludmila Glinskikh, Dmitry Itsykson	July 2019
TCS Women Travel Scholarship To participate in the ACM STOC 2018	June 2018
Yandex Research Fellowship Awarded to Master's students at St. Petersburg Academic University RAS	Fall 2015 – Spring 2017

Teaching

Teaching Fellow <i>CS 530: Graduate Advanced Algorithms</i> Taught by Steven Homer at Boston University	Fall 2022
Grader <i>CS537: Graduate Randomness in Computing</i> Taught by Sofya Raskhodnikova at Boston University	Fall 2021
Teaching Fellow <i>CS 535: Graduate Complexity Theory</i> Taught by Mark Bun at Boston University	Fall 2020
Teaching Assistant <i>Complexity Theory and Randomized Algorithms</i> Taught by Ivan Bliznets at St. Petersburg Academic University RAS	Spring 2018

Advising

Maksim Lonishin and Ilya Kleopatrov <i>Project: Complexity of Representing Boolean Functions via Branching Programs</i> A year-long research project of high school students at Lyceum "Physical-Technical High School" (http://www.school.ioffe.ru/)	Sep 2021 – May 2022
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Academic Service

Reviewer for CSR 2019, ACM STOC 2020, ICALP 2022, AAAI PPAI 2024

Organizer of a [reading group](#) on a Minimum Circuit Size Problem (MCSP) at Boston University

Jun 2020 – Aug 2021

Author of a [Telegram channel](#) (in Russian) with advice for junior researchers

2018 – present

Software Engineering Positions

Google Sunnyvale

Software Engineering Intern (Anonymization Team)

Conducted research and ran analysis of efficiency and accuracy of the various algorithms for sensitivity bounding of differentially private queries in ZetaSQL (<https://github.com/google/zetasql>).

May 2022 – Aug 2022

Google San Francisco

Software Engineering Intern (*Cobalt*)

Added a Golang library for optimal computations of privacy encoding parameters in Cobalt – a framework for differentially private telemetry collection (<https://fuchsia.googlesource.com/cobalt>).

Implemented a Golang library for fast computations of privacy loss distribution.

May 2021 – Aug 2021

Google Zurich

Site Reliability Engineering Intern (*Serving Backend SRE Team*)

Added support of integration testing and multiple integration tests for an internal load testing tool used for testing Google Search. Used internal configuration languages and Python.

Apr 2019 – Jul 2019

Google London

Site Reliability Engineering Intern (*SRE Traffic Team*)

Added dynamical status updates to the internal code review tool from the tool that automatically rebuilds configuration files. Used Golang.

Jun 2017 – Sep 2017

Google Zurich

Site Reliability Engineering Intern (*YouTube Core SRE Team*)

Added support of refined estimations of load on YouTube backends to improve resistance of YouTube internal services from overloading by requests from internal users. Used Python, C++, and JavaScript.

Jul 2016 – Oct 2016

FFmpeg

Software Engineering Intern

Built a suite of tests in C for [FFmpeg](#) API.

May 2015 – Aug 2015

Selected Talks

Branching Program Complexity of Minimization Problems
Theory Seminar, Boston University, Boston, USA

Nov 20, 2023

<i>Circuits and Branching Programs in Meta-Complexity</i> Thesis Proposal, Boston University, Boston, USA	Nov 3, 2023
<i>MCSP is Hard for Read-Once Nondeterministic Branching Programs</i> Student Seminar, Simons Institute, Berkeley, USA	Apr 20, 2023
<i>The Complexity of Verifying Boolean Programs as Differentially Private</i> CSF 2022, Haifa, Israel	Aug 11, 2022
<i>The Role of Pseudorandomness in (Computational) Differential Privacy</i> Qualifying Oral Exam, Boston University, Boston, USA	Dec 20, 2021
<i>The Complexity of Verifying Boolean Programs as Differentially Private</i> Seminar of the Privacy Tools Project, Harvard University, Virtual	Nov 22, 2021
<i>Circuit Lower Bounds from NP-Hardness of MCSP Under Turing Reductions</i> MCSP reading group, Boston University, Boston, USA	Feb 22, 2021
<i>Relations and Equivalences Between Circuit Lower Bounds and Karp-Lipton Theorems</i> MCSP reading group, Boston University, Boston, USA	Nov 2, 2020
<i>Lower bounds for MCSP for restricted circuit models</i> MCSP reading group, Boston University, Boston, USA	Aug 6, 2020
<i>On branching programs, Tseitin formulas and tree-width</i> 24th Estonian Winter School in Computer Science, Palmse, Estonia	Mar 7, 2019
<i>Lower bounds on Branching Programs and Formulas for Orthogonal Vectors</i> Seminar of the Laboratory of Algorithmic Methods, PDMI RAS, St. Petersburg, Russia	Nov 16, 2018
<i>Lower bound for read-once nondeterministic branching program for satisfiable Tseitin formula using tree-width</i> Invited talk at the workshop of Summer School on Algorithms and Lower Bounds, Satellite workshop of ICALP, Prague, Czech Republic	Jul 9, 2018
<i>On branching programs, Tseitin formulas and tree-width</i> Poster at ACM STOC, Los Angeles, USA	Jun 26, 2018
<i>Lower Bounds for Nondeterministic Semantic Read-Once Branching Programs</i> Complexity Seminar, PDMI RAS, St. Petersburg Russia	May 4, 2018
<i>Satisfiable Tseitin formulas are hard for nondeterministic read-once branching programs</i> MFCS, Aalborg, Denmark	Aug 25, 2017
<i>Techniques of proving lower bounds on Query Complexity</i> Seminar on Sublinear Algorithms, Computer Science Club, St. Petersburg, Russia	Oct 14, 2016

Other Activities

Maintainer of FFmpeg, responsible for API test <i>FFmpeg is the leading open source multimedia framework</i>	2015 – present
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Additional Education

Swiss Winter School on Theoretical Computer Science, Zion, Switzerland <i>Expenses covered by a scholarship from the organizers</i>	Jan 29 – Feb 3, 2023
Hilbert–Bernays Summer School on Logic and Computation, Tübingen, Germany <i>Expenses covered by a scholarship from the organizers</i>	Jul 21 – Jul 27, 2019
Caleidoscope: Complexity as a Kaleidoscope, Paris, France	Jun 17 – Jun 21, 2019
24th Estonian Winter School in Computer Science, Palmse, Estonia <i>Expenses covered by a scholarship from the organizers</i>	Mar 3 – Mar 8, 2019
PDMI RAS Computer Science Club (https://compsciclub.ru/en/) St. Petersburg Russia	Sep 2013 – Feb 2019
Summer School on Algorithms and Lower Bounds, Prague, Czech Republic <i>Expenses covered by a scholarship from the organizers</i>	Jul 6 – Jul 9, 2018
Recent Advances in Algorithms, St. Petersburg, Russia	May 22 – May 26, 2018
Recent Advances in Parameterized Complexity, Tel Aviv, Israel	Dec 3 – Dec 7, 2017
Swedish Summer School in Computer Science (S3CS), Stockholm, Sweden <i>Expenses covered by a scholarship from the organizers</i>	Jul 16 – Jul 22, 2017
A Special Semester on Computational and Proof Complexity, St. Petersburg, Russia	Apr – Jun, 2016