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Liana Khazaliya

Research & Education

Aalto University & Helsinki Institute for Information Technology

Helsinki, Finland

Postdoctoral Researcher

Department of Computer Science

Host: Sándor Kisfaludi-Bak

October 2026 – present

TU Wien

Vienna, Austria

University Assistant and Ph.D. Student

Algorithms and Complexity Group

Thesis: “Tractability Barriers for Parameterized (Geo)Metric Graph Problems”

Advisor: Robert Ganian

August 2022 – 22 September 2026

National Institute of Informatics

Tokyo, Japan

Intern Student, Principles of Informatics Research Division

Host: Shuichi Hirahara

October 2024 – March 2025

Saint Petersburg State University

Saint Petersburg, Russia

M.Sc., Department of Mathematics and Computer Science

Programme: Advanced Mathematics

September 2020 – June 2022

Thesis supervisor: Ivan Bliznets

Max Planck Institute for Informatics

Saarbrücken, Germany

Intern Student, Department of Algorithms and Complexity

Dániel Marx’s research group

Spring 2021 (online)

Belarusian State University

Minsk, Belarus

B.Sc., Department of Mechanics and Mathematics

September 2016 – June 2020

Thesis supervisors: Ivan Bliznets, Boris Doubrov

Previous Work Experience

System Analyst

“HiQo Solutions”, Minsk, Belarus

March 2020 – March 2021

Machine learning models to extract clinically relevant features from medical images

Data aggregation, processing, visualization for the used car market

Python/C++

Math tutor

Minsk & St. Petersburg

December 2016 – June 2022

Preparing school students for mathematical competitions and various types of exams

Teaching

2025W: *Structural Decompositions*

TU Wien

Lectures and seminars for Master’s students

2021W, 2022S: *Algorithms*

St. Petersburg State University

Lectures for first-year Bachelor’s students

under Ivan Kazmenko’s supervision and based on his course materials

Academic service

Subreviewer:

Journals: ACM Transactions on Algorithms, SIAM Journal on Discrete Mathematics,
Journal of Artificial Intelligence

Conferences: WALCOM 2027, CCCG 2026, SWAT 2026, WG 2026, SODA 2025,
ICALP 2025, WALCOM 2025, ESA 2024, SoCG 2024, STACS 2024, GD 2023,
IPEC 2022, SOFSEM 2022

Editorial Assistant/Collector of the Dagstuhl Seminar 23162:
New Frontiers of Parameterized Complexity in Graph Drawing
Volunteer at COMSOC 2025, GD 2024, MFCS 2022

Publications



International Conference on Learning Representations: ICLR 2026

Non-Clashing Teaching in Graphs: Algorithms, Complexity, and Bounds
with S. Bhore, F. Mc Inerney

International Conference on Learning Representations: ICLR 2025

The Computational Complexity of Positive Non-Clashing Teaching in Graphs
with R. Ganian, F. Mc Inerney, M. Rocton

International Symposium on Theoretical Aspects of Computer Science: STACS 2025

Metric Dimension and Geodetic Set Parameterized by Vertex Cover
with F. Foucaud, E. Galby, S. Li, F. Mc Inerney, R. Sharma, P. Tale
in **Journal of Computer and System Sciences (JCSS)**, Vol. 164 (2027)

International Symposium on Algorithms and Computation: ISAAC 2024

Graph Crossing Number is NP-hard for Constant Path-width
with Petr Hliněný

International Colloquium on Automata, Languages and Programming: ICALP 2024

Problems in NP can Admit Double-Exponential Lower Bounds when Parameterized by
Treewidth or Vertex Cover
with F. Foucaud, E. Galby, S. Li, F. Mc Inerney, R. Sharma, P. Tale

International Symposium on Algorithms and Computation: ISAAC 2023

The st-Planar Edge Completion Problem is Fixed-Parameter Tractable
with P. Kindermann, G. Liotta, F. Montecchiani, K. Simonov

International Symposium on Parameterized and Exact Computation: IPEC 2023

Consistency-Checking Problems: A Gateway to Parameterized Sample Complexity
with R. Ganian, K. Simonov

International Symposium on Graph Drawing and Network Visualization: GD 2023

Upward and Orthogonal Planarity are $W[1]$ -hard Parameterized by Treewidth
with B.M.P. Jansen, P. Kindermann, G. Liotta, F. Montecchiani, K. Simonov
in **SIAM Journal on Discrete Mathematics (SIDMA)** Vol. 40, Iss. 2 (2026)

International Symposium on Computational Geometry: SoCG 2023

Extending Orthogonal Planar Graph Drawings is Fixed-Parameter Tractable
with S. Bhore, R. Ganian, F. Montecchiani, M. Nöllenburg
in **Journal of Computational Geometry (JoCG 2025)**, Vol. 15 No. 2 (2024)

International Symposium on Mathematical Foundations of Computer Science: MFCS 2022

Metric Dimension Parameterized by Feedback Vertex Set and Other Structural Parameters
with E. Galby, F. Mc Inerney, R. Sharma, P. Tale
in **SIAM Journal on Discrete Mathematics (SIDMA)**, Vol. 37, Iss. 4 (2023)

Talks

Non-Clashing Teaching in Graphs

- 07/26 4th Workshop on the Parameterized Complexity of Computational Reasoning (**PCCR 2026**, co-located with **FLoC 2026**), Lisbon, Portugal
- 04/26 Poster session at 14th International Conference on Learning Representations (**ICLR 2026**), Rio de Janeiro, Brazil
- 03/26 Seminar of the Algorithms & Complexity Group at Leeds University, UK
- 03/26 Seminar of the School of Computer Science & Informatics, Liverpool University, UK

The Computational Complexity of Positive Non-Clashing Teaching in Graphs

- 04/25 Poster session at 13th International Conference on Learning Representations (**ICLR 2025**), Singapore EXPO, Singapore

Crossing Number is NP-hard for Constant Path-width (and Tree-width)

- 12/24 35th International Symposium on Algorithms and Computation (**ISAAC 2024**), Sydney, Australia
- 11/24 TCS Seminar, National Institute of Informatics, Tokyo, Japan
Problems in NP can Admit Double-Exponential Lower Bounds when Parameterized by Treewidth or Vertex Cover
- 09/24 11th Workshop on Graph Classes, Optimization, and Width Parameters (**GROW 2024**), Cottbus, Germany
- 07/24 51st EATCS International Colloquium on Automata, Languages and Programming (**ICALP 2024**), Tallinn, Estonia
- 06/24 Research seminar of the ALGO group, TU Eindhoven, Netherlands

Upward and Orthogonal Planarity are $W[1]$ -hard Parameterized by Treewidth

- 03/24 Research Seminar of the Algorithm Engineering group, Hasso-Plattner-Institut, Potsdam, Germany
- 02/24 Seminar on Foundations of Computing, Masaryk University, Brno, Czech Republic
- 09/23 31st International Symposium on Graph Drawing and Network Visualization (**GD 2023**), Palermo, Italy

Extending Orthogonal Planar Graph Drawings is Fixed-Parameter Tractable

- 06/23 Contributed talk at Algorithmic Graph Theory minisymposium of 10th Slovenian Conference on Graph Theory (**SCGT**), Kranjska Gora, Slovenia
- 06/23 Contributed talk at The IGAFIT Highlights of Algorithms (**HALG 2023**), Prague, Czech Republic

Metric Dimension Parameterized by Feedback Vertex Set and Other Structural Parameters

- 10/22 Poster session at DIMEA Days 2022, Masaryk University, Brno, Czech Republic
- 08/22 Talk at 47th International Symposium on Mathematical Foundations of Computer Science (**MFCS 2022**), Vienna, Austria