

Ivan Yakovlev

Curriculum Vitae

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Education

- 2021–2024 **PhD in Pure Mathematics**, *Université de Bordeaux*.
At Laboratoire Bordelais de Recherche en Informatique (LaBRI).
Combinatorics and Interactions group.
Thesis advisor: Vincent Delecroix. Thesis title: Quadrangulations with monodromy constraints.
- 2018–2021 **Normalien at École Normale Supérieure de Paris**.
Admitted via the International Selection program. 3 year scholarship.
- 2019–2021 **Master of Mathematics, Fundamental Mathematics track**, *Sorbonne Université*.
- 2018–2019 **Bachelor (Licence) in Mathematics**, *Sorbonne Université*.
- 2015–2019 **Bachelor in Applied Mathematics**, *Taras Shevchenko National University of Kyiv*.

Research interests

Enumeration of square-tiled surfaces according to their number of cylinders.
In general: moduli spaces of curves/differentials (hyperbolic/flat surfaces), combinatorial maps (ribbon graphs), Hurwitz theory, intersection theory on moduli spaces.

Publications

Contribution of n -cylinder square-tiled surfaces to Masur–Veech volume of $\mathcal{H}(2g-2)$,
Geometric and Functional Analysis (GAFA), 2023.
DOI link: <https://doi.org/10.1007/s00039-023-00652-9>
Arxiv link: <https://arxiv.org/abs/2209.12348>

Refereed proceedings

Algorithms for length spectra of combinatorial tori (extended abstract),
with V. Delecroix, M. Ebbens, F. Lazarus.
39th International Symposium on Computational Geometry (SoCG 2023),
Vol. 258 of Leibniz International Proceedings in Informatics (LIPIcs), pages 26:1–26:16, Dagstuhl,
Germany, 2023.
DOI link: <https://doi.org/10.4230/LIPIcs.SoCG.2023.26>
Full version of this paper was accepted to the *Journal of Computational Geometry*.
Arxiv link: <https://arxiv.org/abs/2303.08036>

Talks

- Jan 2024 Journées de combinatoire de Bordeaux, *LaBRI, Bordeaux*.
- Oct 2023 Geometry and Topology seminar, *Université du Luxembourg*.
- May 2023 LAMFA PhD Seminar, *LAMFA, Amiens*.
- Mar 2023 ALEA days, *CIRM, Marseille*.
- Mar 2023 Journée cartes at Marne-la-Valée, *Université Gustave Eiffel, Marne*.
- Jan 2023 Seminar of Combinatorics and Interactions group, *LaBRI, Bordeaux*.

- Nov 2022 Algebraic geometry and moduli seminar, *ETH Zurich*.
- Apr 2022 Workshop of ANR MoDiff, *LaBRI, Bordeaux*.
- Jan 2022 Seminar of Combinatorics and Interactions group, *LaBRI, Bordeaux*.

Visits

- Oct 2023 Université du Luxembourg (1 week).
- May 2023 Institut Fourier, Grenoble (1 week).
- Nov 2022 ETH Zurich, (1 week).
- May 2021 M2 internship visit, LaBRI, Bordeaux, (1 month).

Teaching

- 2023-2024 Computer networks (2nd year Bachelor).
Introduction to C programming (1st year Bachelor).
- 2022-2023 Algorithms on tree-like data structures (2nd year Bachelor).
- 2021-2022 Combinatorics, Probability, Statistics (2nd year Bachelor).
Algorithms on arrays (1st year Bachelor).

Organization / outreach

- Mar 2024 Co-organization of the School on flat surfaces and interactions, Le Teich (Bordeaux).
- 2022-2023 Co-organization of the Combinatorics and Interactions seminar at LaBRI, Bordeaux.
- Jun 2022 Training of Ukrainian team for international maths olympiads, CIRM, Marseille, France.
- Apr 2019 Coordinator at European Girls' Mathematical Olympiad, Kyiv, Ukraine.
- 2015-2018 Olympiad mathematics teaching for high-school students, Kyiv, Ukraine.

Participation in conferences, schools

- Jan 2024 Sage Days 125, Le Teich (Bordeaux).
- Oct 2023 Conference "Probability and Geometry in, on and of non-Euclidean spaces", CIRM, Marseille.
- Jul 2023 Research school "Renormalization and Visualization for packings, billiards and surfaces", CIRM, Marseille.
- Jul 2023 IMJ-PRG Summer School 2023 "Microlocal and probabilistic methods in geometry and dynamics", Paris.
- Nov 2022 Meeting of young researchers in geometry and dynamics, Orsay.
- Oct 2022 School on Random Walks, Göttingen.
- Sep 2022 Conference "Combinatorics, dynamics and geometry in the moduli spaces", CIRM, Marseille.
- May 2022 Conference "Structures on Surfaces", CIRM, Marseille.
- Mar 2022 ALEA days, CIRM, Marseille.
- Jan 2022 Winter school on billiards, Autrans.
- Sep 2021 Summer school on topological recursion "TRSalento", Otranto.

Miscellaneous

Languages: English, French, Russian (native), Ukrainian (native).
Programming: C++, Python, SageMath, OCaml.