

Yury Ustinovskiy

Curriculum Vitae

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Education

- 2014–2018 **Princeton University**, *PhD in mathematics*, Department of Mathematics.
◦ Adviser: Gang Tian
◦ Thesis: Hermitian curvature flow and curvature positivity conditions
- 2006–2012 **Independent University of Moscow**, *Master's degree in mathematics cum laude*.
◦ Adviser: Taras Panov
◦ Thesis: Geometrical structures on moment-angle-manifolds
- 2006–2011 **Moscow State University**, *Master's degree in mathematics cum laude*, Department of Geometry and Topology.
◦ Adviser: Taras Panov
◦ Thesis: Geometrical structures on moment-angle-manifolds

Research Interests

Differential geometry, geometric flows, complex geometry, topology of toric symmetries, applications of machine learning

Professional Experience

- 2018–present **Assitant Professor**, *Courant Institute, New York University*.
- 2019–present **Instructor**, *New York math circle*, “College Bridge” program.
- 2015–2018 **Assistant in teaching / Assistant in research**, *Princeton University*.
- 2011–2014 **Teaching assistant**, *Moscow Institute of Physics and Technology*, Moscow, Seminars on differential geometry and topology for undergraduate students.
- 2009–2014 **Researcher-developer**, *Yandex*, Moscow, Department of theoretical and applied research.
- 2006–2014 **Mathematics teacher**, *High School no.57*, Moscow, Mathematics for gifted students.

Publications & Preprints

- 2020 **The Gibbons-Hawking ansatz in generalized Kähler geometry**, *J. Streets, Y. Ustinovskiy*, preprint.
[arXiv:2009.00778](https://arxiv.org/abs/2009.00778)
- 2020 **Classification of generalized Kähler-Ricci solitons on complex surfaces**, *J. Streets, Y. Ustinovskiy*, CPAM (accepted).
[arXiv:1907.03819](https://arxiv.org/abs/1907.03819)
- 2020 **On the structure of Hermitian manifolds with semipositive Griffiths curvature**, *Y. Ustinovskiy*, Transactions of AMS, 373(8), pp. 5333–5350.
[arXiv:1904.06810](https://arxiv.org/abs/1904.06810)
- 2020 **Lie-Algebraic Curvature Conditions preserved by the Hermitian curvature flow**, *Y. Ustinovskiy*, Mathematische Annalen.
[arXiv:1710.06035](https://arxiv.org/abs/1710.06035)
- 2019 **Hermitian curvature flow on complex homogeneous manifolds**, *Y. Ustinovskiy*, Ann. Scuola Norm. Sup. Pisa Cl. Sci. (accepted).
[arXiv:1706.07023](https://arxiv.org/abs/1706.07023)
- 2019 **The Hermitian curvature flow on manifolds with non-negative Griffiths curvature**, *Y. Ustinovskiy*, American Journal of Mathematics, 141(6), pp. 1751–1775.
[arXiv:1604.04813](https://arxiv.org/abs/1604.04813)

- 2018 **Hermitian Curvature Flow and Curvature Positivity Conditions**, *Y. Ustinovskiy*, thesis.
arks.princeton.edu/ark:/88435/dsp01td96k5219
- 2018 **On face numbers of flag simplicial complexes**, *Y. Ustinovskiy*, *Discrete Comput. Geom.*, 60:688, pp. 688–697.
arXiv:1610.03888
- 2016 **Projective toric polynomial generators in the unitary cobordism ring**, *G. Solomadin, Y. Ustinovskiy*, *Mat. Sbornik*, 207:11, pp. 127–152.
arXiv:1602.02448
- 2016 **Complex geometry of moment-angle manifolds**, *T. Panov, Y. Ustinovsky, M. Verbitsky*, *Mathematische Zeitschrift*, 2016, 1-2:284, pp. 309–333.
arXiv:1308.2818
- 2014 **Geometry of compact complex manifolds with maximal torus action**, *Y. Ustinovsky*, *Tr. Mat. Inst. Steklova*, 2014: 286, pp. 219–230.
arXiv:1308.2818
- 2012 **On torus actions and Horrocks conjecture**, *Yu. M. Ustinovskii*, *Far Eastern mathematical journal*, 2012, 12:1, pp. 98–107.
arXiv:1203.3685
- 2012 **Complex-analytic structures on moment-angle-manifolds**, *T. Panov, Y. Ustinovsky*, *Moscow Mathematical Journal*, 2012, 12:1.
arXiv:1008.4764
- 2011 **Toral Rank Conjecture for Moment-Angle Complexes**, *Yu. M. Ustinovskii*, *Math. Notes*, 2011, 90:2, pp. 279–283.
arXiv:0909.1053
- 2009 **Doubling operation for polytopes and torus actions**, *Yu. M. Ustinovskii*, *Russian Mathematical Surveys*, 2009, 64:5, pp. 952–954.
arXiv:0909.1050

Applied research publications

- 2018 **Finding Influential Training Samples for Gradient Boosted Decision Trees**, *B. Sharchilev, Y. Ustinovskiy, P. Serdyukov, M. de Rijke*, *ICML*, 2018, 4584–4592.
- 2016 **Meta-Gradient Boosted Decision Tree Model for Weight and Target Learning**, *Y. Ustinovskiy, V. Fedorova, G. Gusev, P. Serdyukov*, *ICML*, 2016, 2692–2701.
- 2016 **An Optimization Framework for Remapping and Reweighting Noisy Relevance Labels**, *Y. Ustinovskiy, V. Fedorova, G. Gusev, P. Serdyukov*, *SIGIR*, 2016, 105–114.
- 2015 **Adaptive Caching of Fresh Web Search Results**, *L. Ostroumova Prokhorenkova, Y. Ustinovskiy, E. Samosvat, D. Lefortier, P. Serdyukov*, *ECIR*, 2015, 110–122.
- 2015 **An Optimization Framework for Weighting Implicit Relevance Labels for Personalized Web Search**, *Y. Ustinovskiy, G. Gusev, P. Serdyukov*, *WWW*, 2015, 1144–1154.
- 2013 **Personalization of web-search using short-term browsing context**, *Y. Ustinovsky, P. Serdyukov*, *CIKM*, 2013, 1979–1988.
- 2013 **Predicting the impact of expansion terms using semantic and user interaction features**, *A. Bakhtin, Y. Ustinovsky, P. Serdyukov*, *CIKM*, 2013, 1825–1828.
- 2013 **Intent-Based Browse Activity Segmentation**, *Y. Ustinovsky, A. Mazur, P. Serdyukov*, *ECIR*, 2013, 242–253.
- 2012 **Session-based query performance prediction**, *A. Kustarev, Y. Ustinovsky, A. Mazur, P. Serdyukov*, *CIKM*, 2012, 2563–2566.
- 2012 **Measuring usefulness of context for context-aware ranking**, *A. Kustarev, Y. Ustinovsky, P. Serdyukov*, *WWW*, 2012, 551–552.
- 2011 **Smoothing NDCG metrics using tied scores**, *A. Kustarev, Y. Ustinovsky, Y. Logachev, E. Grechnikov, I. Segalovich, P. Serdyukov*, *CIKM*, 2011, 2053–2056.

Teaching

2018–2020 **New York University**

- Abstract Algebra (Fall '20, Spring '20)
- Complex Variables (Fall '19)
- Mathematics for Economics II (Spring '19)
- Calculus 1 (Fall '18)

2018–2020 Instructor at **New York Math Circle** program 'College Bridge'

2015–2018 **Princeton University** (TA)

- Introduction to Graph Theory, Spring '18
- Applied Algebra, Fall '17
- Probability Theory, Spring '17
- Linear Algebra with Applications, Fall '16, Spring '17
- Advanced Linear Algebra with Applications, Spring '16
- Honors Analysis (Single Variable), Fall '15

2012–2014 **Moscow Institute of Physics and Technology**

- Introduction to Differential Geometry, Fall '12, Fall '13
- Classical Mechanics, Spring '13, Spring '14
- Introduction to Topology, Spring '12

Professional Service

Reviewer: Advances in Mathematics, Analysis & PDE, Mathematical Research Letters, International Mathematics Research Notices, Discrete and Computational Geometry, Moscow Mathematical Journal, Annali di Matematica Pura ed Applicata, Mexican Mathematical Bulletin, Proceedings of the Steklov Institute of Mathematics, Sbornik Mathematics, Journal of the Mathematical Society of Japan

Patent Grants & Applications

- 2017 **Method for training a ranker module using a training set having noisy labels**, *patent application*, US20170293859A1.
- 2017 **System and method for ranking search engine results**, *patent*, US20170185602A1.
- 2016 **Search result ranker**, *patent*, US9501575B2.
- 2015 **Systems and methods for classification and segmentation of browsing logs based on user's search goals**, *patent*, US8938408B1.

Recent Conference Talks

- 06.2019 *Lehigh Geometry/Topology conference*
Lehigh University
- 06.2018 *Viktor Buchstaber's birthday conference*
Moscow, Steklov Institute
- 06.2017 *Encounter in Topology 'n Algebra*
Catania, Scuola Superiore di Catania
- 05.2017 *AMS Sectional Meeting*
New York, Hunter College
- 02.2017 *RTG day*
Princeton University

Recent Seminar Talks

- 06.2020 Generalized Kahler-Ricci solitons on complex surfaces
Zoomerfest, Higher School of Economy, Moscow

- 11.2019 Hermitian Curvature Flow and uniformization problems in complex geometry
Almost complex geometry seminar, CUNY
- 09.2019 Hermitian Curvature Flow and Geometry of Torsion-Twisted Connection
Complex geometry and PDE seminar, Columbia University
- 04.2019 On the Structure of Hermitian Manifolds with Semipositive Griffiths Curvature
Algebra Seminar, NYU
- 10.2018 Geometric Flows in Hermitian Geometry & Uniformization Problems
Courant Instructor Day, NYU
- 08.2018 Hermitian Curvature Flow on complex homogeneous manifolds
Geometry seminar, Università degli Studi di Firenze
- 10.2017 Lie algebraic curvature conditions preserved by Hermitian curvature flow
Complex analysis and geometry seminar, Rutgers University
- 02.2017 Metric flows on Hermitian manifolds
Seminar of the laboratory of algebraic geometry and its applications, Higher School of Economy, Moscow
- 02.2017 Maximum principle for tensors and Ricci flow invariant curvature conditions
Graduate student seminar, Princeton
- 01.2017 Hermitian curvature flow and positivity
Differential geometry seminar, UC Irvine