

Ekaterina (Katya) Noskova

Ph.D. in Engineering
Postdoc at the University of Edinburgh, UK

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EDUCATION

- Dec 2023.** *Ph.D. in Engineering (Methods for Inferring Demographic History Models)*
Department of Information Technologies and Programming, ITMO University, St. Petersburg, Russia
Supervisor: Dr. V.I. Ulyantsev
- Aug 2018.** *M.Sc. in Algorithmic Bioinformatics*
Department of Mathematics and Information Technology, St. Petersburg Academic University
- Aug 2016.** *B.Sc. in Applied Mathematics and Computer Science*
Department of Mathematics and Mechanics, St. Petersburg State University

POSITIONS HELD TO DATE

- Apr 2025 – Sep 2027.** *Postdoc, MSCA postdoctoral fellow in Dr. Konrad Lohse's group*
Institute of Ecology and Evolution, University of Edinburgh, UK
- Nov 2024 – Mar 2025.** *Postdoc in Prof. Dr. Alex Widmer's group*
Department of Environmental Systems Science, ETH Zurich, Switzerland
- Jun 2023 – Oct 2024.** *Junior Researcher, Postdoc in Prof. Dr. Daniel Wegmann's group*
Department of Biology, University of Fribourg, Switzerland
- Sep 2017 – Mar 2022.** *Researcher in Computer Technologies Laboratory*
ITMO University, St. Petersburg, Russia (PhD funding)

AWARDS & HONORS

- 2024.** *Second place at the GHIST 2024 competition*
Team leader, team of 6 people
- 2021.** *System Biology Fellowship by Philip Morris International*
5 winners across Russia, ≈36 000 USD for 3 years, 1 person
Project: Computational methods for unsupervised demographic inference of multiple populations
- 2020.** *Bronze at 17th Annual Humies Awards, GECCO (premier conference on genetic algorithms)*
3 winners, 2 000 USD for bronze
- 2019.** *Smithsonian Short Term Fellowship at the National Zoological Park, Washington DC, USA*
3 500 USD for 1-month visit, 1 person
Hosted by Dr. Klaus-Peter Koepfli, Dr. Pavel Dobrynin
- 2017.** *First place at the JetBrains-affiliated Biohack hackathon*
≈1 000 USD, team of 5 people

PROFESSIONAL MEMBERSHIPS

- Since 2019.** *PopSim consortium* — a community-driven effort to standardize population genetics
Involved in projects: *stdpopsim*, *demes*

LINKS

- Scholar** <https://scholar.google.com/citations?user=1Mlxh7wAAAAJ>
GitHub <https://github.com/noscode>
Bitbucket <https://bitbucket.org/noscode>

ADDITIONAL EDUCATION

- 2024.** Ancient DNA Workshop, Gemmi, Leukerbad, Switzerland, 2–5 Sep 2024.
- 2019.** *Systems Biology Workshop*, St. Petersburg, Russia, 19–24 May 2019.
- 2017.** Algorithmic Bioinformatics program, Bioinformatics Institute, St. Petersburg, Russia
488 academic hours, 1 year

WORK SKILLS AND SCIENTIFIC SERVICE

- Computer Skills:** Python, C++
- Languages:** English (B2), Russian (C2), German (A1), Hebrew (א)
- Reviewing for journals:** BMC Bioinformatics, GigaScience

TEACHING

- 2024.**
- Online course (16 lectures), Bioinformatics Algorithms, 2nd year M.Sc., ITMO University, Fall 2024
- 2023.**
- Online course (16 lectures), Bioinformatics Algorithms, 2nd year M.Sc., ITMO University, Fall 2023
 - Tutorial instructor at ConGen course and Smithsonian Mason School of Conservation workshop
- 2022.**
- Course (7 lectures), Algorithms in Bioinformatics, Bioinformatics Institute, Fall 2022
- 2021.**
- *Course (13 lectures)*, Algorithms in Bioinformatics, Bioinformatics Institute, Fall 2021
 - *Lecture*, Hidden Markov Model (HMM), Algorithms in Bioinformatics problems course for 1st year master-students, 18 Nov 2021
- 2019.**
- *Lecture*, Population genetics and demographic inference, Computer Science Center, 18 Nov 2019, <https://compscicenter.ru/videos/population-history/>
- 2018.**
- *Lecture*, Genetic Algorithm for Automatic Inferring of Demographic Model from Allele Frequency Spectrum, Evolution algorithms course for 2nd year master-students, Fall 2018

WORKSHOP ORGANIZATION

- 2024.**
- Workshop on Demographic Inference, virtual, 18-19 Nov 2024 (30 participants)

SUPERVISION

- Bachelor's thesis of Pavel Khuzhin, co-supervised with V. Ulyantsev, ITMO University, 2020
- *Semester projects* of I. Sheshukov, V. Efremova, E. Kasyanova, E. Vinogradova, S. Uliutkin, ITMO University, 2019–2021
- *Semester project* of N. Abramov, JetBrains Research, 2020
- *Semester projects* of I. Sheshukov, E. Yakovleva, D. Biba, S. Uliutkin, A. Sidorin, E. Gorelkina, Bioinformatics Institute, 2019–2021

SOFTWARE

- [GADMA](#) (*Global search Algorithm for Demographic Model Analysis*)
easy-to-use software for automatic demographic inference of multiple populations from genetic data
≈300 downloads per month, ≈40 closed issues, 30+ stars on GitHub
- *SweepLink*
software for joint inference of demography and linked selection (manuscript in preparation)
- *I have contributed to [stdpopsim](#) and [demes](#) — community-driven projects of PopSim consortium*

PUBLICATIONS

2023.

- **E. Noskova**, N. Abramov, S. Iliutkin, A. Sidorin, P. Dobrynin, and V. Ulyantsev
GADMA2: more efficient and flexible demographic inference from genetic data
GigaScience, Volume 12, 2023, giad059, <https://doi.org/10.1093/gigascience/giad059>
- **E. Noskova**, V. Borovitskiy
Bayesian optimization for demographic inference
G3 Genes|Genomes|Genetics, Volume 13, Issue 7, July 2023,
<https://doi.org/10.1093/g3journal/jkado80>
- M.E. Lauterbur, M.I.A. Cavassim, A.L. Gladstein, G. Gower, N.S. Pope, G. Tsambos, J. Adrion, S. Belsare, A. Biddanda, V. Caudill, J. Cury, I. Echevarria, B. C. Haller, A.R. Hasan, X. Huang, L.N.M. Iasi, **E. Noskova**, J. Obšteter, V.A.C. Pavinato, A. Pearson, D. Peede, M.F. Perez, M.F. Rodrigues, C.C.R. Smith, J.P. Spence, A. Teterina, S. Tittes, P. Unneberg, J.M. Vazquez, R.K. Waples, A.W. Wohns, Y. Wong, F. Baumdicker, R.A. Cartwright, G. Gorjanc, R.N. Gutenkunst, J. Kelleher, A.D. Kern, A.P. Ragsdale, P.L. Ralph, D.R. Schrider, I. Gronau
Expanding the stdpopsim species catalog, and lessons learned for realistic genome simulations
eLife, Volume 12, 2023, <https://doi.org/10.7554/eLife.84874.3>

2022.

- N. Nikolic, F. Devloo-Delva, D. Bailleul, **E. Noskova**, C. Rougeux, C. Delord, P. Borsa, C. Liautard-Haag, M. Hassan, A. Marie, P. Feutry, P. Grewe, C. Davies, J. Farley, D. Fernando, S. Biton-Porsmoguer, F. Poisson, D. Parker, A. Leone, J. Aulich, M. Lansdell, F. Marsac, S. Arnaud-Haond
*Stepping up to genome scan allows stock differentiation in the worldwide distributed blue shark *Prionace glauca**
Cover, Molecular Ecology, Volume 32, Issue 5, 2022
<https://doi.org/10.1111/mec.16822>
- G. Gower, A.P. Ragsdale, G. Bisschop, R.N. Gutenkunst, M. Hartfield, **E. Noskova**, S. Schiffels, T.J. Struck, J. Kelleher, K.R. Thornton
Demes: a standard format for demographic models
Genetics, Volume 222, Issue 3, November 2022, iyac131, <https://doi.org/10.1093/genetics/iyac131>

2020.

- J.R. Adrion, C.B. Cole, N. Dukler, J.G. Galloway, A.L. Gladstein, G. Gower, C.C. Kyriazis, A.P. Ragsdale, G. Tsambos, F. Baumdicker, J. Carlson, R.A. Cartwright, A. Durvasula, B.Y. Kim, P. McKenzie, P.W. Messer, **E. Noskova**, D. Ortega-Del Vecchyo, F. Racimo, T.J. Struck, S. Gravel, R.N. Gutenkunst, K.E. Lohmeuller, P.L. Ralph, D.R. Schrider, A. Siepel, J. Kelleher, A.D. Kern
A community-maintained standard library of population genetic models
eLife, 2020, 9:e54967, <https://doi.org/10.7554/eLife.54967>

- **E. Noskova**, V. Ulyantsev, K.-P. Koepfli, S.J. O'Brien, Pavel Dobrynin
GADMA: Genetic Algorithm for Automatic Inferring the Joint Demographic History of Multiple Populations from Allele Frequency Spectrum
GigaScience, Volume 9, Issue 3, March 2020, g1aa005, <https://doi.org/10.1093/gigascience/g1aa005>
- D.V. Zhernakova, V. Brukhin, S. Malov, T.K. Oleksyk, K.-P. Koepfli, A. Zhuk, P. Dobrynin, S. Kliver, N. Cherkasov, G. Tamazian, M. Rotkevich, K. Krashenninnikova, I. Evsyukov, S. Sidorov, A. Gorbunova, E. Chernyaeva, A. Shevchenko, S. Kolchanova, A. Komissarov, S. Simonov, A. Antonik, A. Logachev, D.E. Polev, O.A. Pavlova, A.S. Glotov, V. Ulyantsev, **E. Noskova**, T.K. Davydova, T.M. Sivtseva, S. Limborska, O. Balanovsky, V. Osakovsky, A. Novozhilov, V. Puzyrev, S.J. O'Brien
Genome-wide sequence analyses of ethnic populations across Russia
Genomics, Volume 112, Issue 1, 2020, <https://doi.org/10.1016/j.ygeno.2019.03.007>

PEER REVIEWER: BMC Bioinformatics, GigaScience, Molecular Ecology

INVITED TALKS

- 18 Sep 2024.** *Demographic Inference from Genetic Data using GADMA*
[Widmer](#) group, ETH Zurich, Zurich, Switzerland
- 08 May 2024.** *The Joint Inference of Demography and Selection from Time-series Data*
University of Edinburgh, Edinburgh, UK
- 13 Dec 2023.** *Demographic Inference from Genetic Data using GADMA*
Population Genetics Group Meeting, University of Chicago, Chicago, USA
- 15 Nov 2023.** *Demographic Inference from Genetic Data using GADMA*
[Computational and RNA Biology](#), University of Copenhagen, Copenhagen, Denmark
- 14 Nov 2023.** *Demographic Inference from Genetic Data using GADMA*
[The Racimo lab](#), Globe Institute, Copenhagen, Denmark
- 07 Jun 2023.** *Demographic Inference from Genetic Data using GADMA*
[Barton Group](#), ISTA, Klosterneuburg, Austria
- 22 May 2023.** *Demographic Inference from Genetic Data using GADMA*
[Population Genetics and Genomics Group](#), UNIL, Lausanne, Switzerland
- 16 May 2023.** *Demographic Inference from Genetic Data using GADMA*
[Evolutionary and Ecological Genomics Group](#), University of Zurich, Zürich, Switzerland
- 11 May 2023.** *Demographic Inference from Genetic Data using GADMA*
Genomics club, WSL, Zürich, Switzerland
- 24 Apr 2023.** *Demographic Inference from Genetic Data using GADMA*
[Population Genomics Group](#), University of Zurich, Zürich, Switzerland
- 06 Apr 2023.** *Demographic Inference from Genetic Data using GADMA*
[Research Centre of Bioinformatics](#), ZHAW, Wädenswil, Switzerland
- 04 Apr 2023.** *Demographic Inference from Genetic Data using GADMA*
[Statistical and Computational Evolutionary Biology Group](#), University of Fribourg, Switzerland
- 27 Mar 2023.** *Demographic Inference from Genetic Data using GADMA*
[Computational and Molecular Population Genetics Group](#), University of Bern, Bern, Switzerland
- 07 Mar 2023.** *Demographic Inference Benchmarking with GADMA and StdpopSim*
PopSim Satellite Meeting, Cold Spring Harbor Laboratory, Cold Spring Harbor, USA
- 09 Nov 2022.** *Bayesian Optimization for Demographic Inference*
[Learning & Adaptive Systems Group](#), ETH Zurich, Zurich, Switzerland

CONFERENCES ATTENDED

2024.

- Talk, Hidden Diffusion: Accurate Joint Inference of Selection and Demographic History from Time-series Data for Multiple Populations
SMBE, Puerto Vallarta, Mexico, 7–11 July
- *Poster*, Hidden Diffusion: Accurate Joint Inference of Selection and Demographic History from Time-series Data for Multiple Populations
ProbGen, Vienna, Austria, 10–12 April

2023.

- *Poster*, Demographic inference using GADMA2
SMBE meeting, Ferrara, Italy, 23–27 July
- *Poster*, Comparing Demographic Inference Tools using GADMA2 and Stdpopsim
ProbGen, Cold Spring Harbor Laboratory, Cold Spring Harbor, USA, 08–11 March
- Talk, Demographic Inference Benchmarking with GADMA and Stdpopsim
PopSim Satellite meeting, Cold Spring Harbor Laboratory, Cold Spring Harbor, USA, 08–11 March

2022.

- *Poster*, Demographic inference using GADMA2
Conservation Genomics at the Population Level, Wellcome Genome Campus, UK and virtual, 30 Nov–2 Dec
- *Poster*, GADMA2: New Features for Efficient and Flexible Demographic Inference
ProbGen, virtual, 28–30 Mar
- Talk, Bayesian Optimization for Demographic History Inference
Scientific and educational conference of the ITMO University, St. Petersburg, Russia, 02–05 Feb

2021.

- Talk, Bayesian Optimization for Demographic History Inference
Probabilistic Techniques in Analysis, Sirius, Sochi, Russia, 06–10 Dec
- *Poster*, New features in GADMA for efficient and flexible inference of demographic history
MCCMB, SkolTech, Moscow, Russia, 30 Jul–03 Aug
- *Poster*, Bayesian optimization for demographic inference of four and five populations
ProbGen, virtual, 14–16 Apr

2020.

- *Attendance*, GECCO conference, virtual, 8–12 Jul

2019.

- *Poster*, Genetic algorithm for demographic inference from the allele frequency spectrum
ProbGen, Paul Langevin Center, Aussois, France, 6–9 Oct
- *Attendance*, PopSim Satellite meeting, Paul Langevin Center, Aussois, France, 5 Oct 2019
- *Poster*, Demographic Inference from the Allele Frequency Spectrum
MCCMB, Moscow State University, Moscow, Russia, 27–30 Jul
- *Poster*, Automation of the process of inferring the demographic history of several populations from the allele frequency spectrum
VII Congress and Associate Symposiums of Vavilov Society of Geneticists and Breeders on the 100th Anniversary of the Department of Genetics of Saint Petersburg State University, St. Petersburg State University, St. Petersburg, Russia, 18–22 Jun

2017-2018.

- *Talk*, VII Interuniversity conference of young scientists, ITMO University, St. Petersburg, Russia, 17–20 Apr
- *Talk*, Scientific and educational conference of the ITMO University, St. Petersburg, Russia, 30 Jan – 02 Feb
- *Attendance*, PDMI-Huawei Conference on Machine Learning and Algorithms, St. Petersburg, 18–20 Dec

REFERENCES

- **Prof. Dr. Daniel Wegmann**
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- **Dr. Klaus-Peter Koepfli**
National Zoological Park
Smithsonian Conservation Biology Institute
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- **Dr. Vladimir Ulyantsev**
Computer Technologies Laboratory
ITMO University
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- **Prof. Dr. Stephen J. O'Brien**
Guy Harvey Oceanographic Center
Nova Southeastern University
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