

# Alexander Tyurin

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## Curriculum Vitae

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### Education

- 2017–2020 **PhD in Computer Science**, *Higher School of Economics*, Moscow, Faculty of Computer Science.  
PhD thesis: [Development of a method for solving structural optimization problems](#)  
Supervisor: Alexander Gasnikov  
Committee: Yurii Nesterov, Anatoli Juditsky, Boris Mordukhovich, Katya Scheinberg, Alexander Nazin
- 2015–2017 **Masters of Computer Science**, *Higher School of Economics*, Moscow, Faculty of Computer Science, *GPA – 9.84 / 10*.  
Master's programme 'Mathematical Methods of Optimization and Stochastics'
- 2011–2015 **Bachelor of Computer Science**, *Lomonosov Moscow State University*, Moscow, Faculty of Computational Mathematics and Cybernetics, *GPA – 4.97 / 5*.

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### Work experience

- 2021–present **Postdoctoral fellow**, KAUST, VISUAL COMPUTING CENTER, Saudi Arabia.
- 2018–2021 **Research and development engineer**, YANDEX SELF-DRIVING CARS, Moscow.  
Using lidar (3D point clouds) and cameras (images) sensors, we develop real-time algorithms for dynamic and static objects detection in a perception team for self-driving cars. Primary responsibilities: from creating datasets and research (Python, SQL, MapReduce) to implementation of proposed algorithms (C++).
- 2018–2021 **Junior research fellow**, HIGHER SCHOOL OF ECONOMICS, Moscow, Part time.  
Working on PhD thesis that is based on 8 publications in Scopus indexed journals.
- 2017–2020 **Teaching assistant**, HIGHER SCHOOL OF ECONOMICS, Moscow.  
Course: Continuous Optimization. Responsibilities: conduct seminars, preparing theoretical and practical homeworks.
- 2018 **Research engineer**, ALTERRA.AI, Moscow.  
Developed NLP assistant algorithms for generic business tasks.
- 2015–2018 **Research engineer**, VISIONLABS, Moscow.  
Developed a face recognition algorithm that showed **top 2** result in an international competition FRVT NIST. Primary responsibilities: metric learning with CNN backbone, preparing a large scale face recognition dataset.

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### Computer skills

Python, C++, L<sup>A</sup>T<sub>E</sub>X, Matlab, SQL, MapReduce, Git, ...

## Languages

Russian **Native**

English **Advanced**

## Publications

- *Dvurechensky P., Gasnikov A., Omelchenko A., Tyurin A.* A stable alternative to Sinkhorn's algorithm for regularized optimal transport // *Lecture Notes in Computer Science*. 2020. V. 12095. P. 406–423.
- *Dvinskikh D., Omelchenko A., Gasnikov A., Tyurin A.* Accelerated gradient sliding for minimizing the sum of functions // *Doklady Mathematics*. 2020. V. 101. N. 3. P. 244–246.
- *Tyurin A.* Primal–dual fast gradient method with a model // *Computer Research and Modeling*. 2020. V. 12, N. 2. P. 263–274. (in russian)
- *Dvinskikh D., Tyurin A., Gasnikov A., Omelchenko S.* Accelerated and nonaccelerated stochastic gradient descent with model conception // *Mathematical Notes*. 2020. V. 108. N. 4. P. 511–522 (main co-author).
- *Gasnikov A., Tyurin A.* Fast gradient descent for convex minimization problems with an oracle producing a  $(\delta, L)$ -model of function at the requested point // *Computational Mathematics and Mathematical Physics*. 2019. V. 59. N. 7. P. 1085–1097. (main co-author; alphabetical order).
- *Stonyakin F., Dvinskikh D., Dvurechensky P., Kroshnin A., Kuznetsova O., Agafonov A., Gasnikov A., Tyurin A., Uribe C., Pasechnyuk D., Artamonov S.* Gradient methods for problems with inexact model of the objective // *Lecture Notes in Computer Science*. 2019. V. 11548. P. 97–114.
- *Ogaltsov A., Tyurin A.* A heuristic adaptive fast gradient method in stochastic optimization problems // *Computational Mathematics and Mathematical Physics*. 2019. V. 60. N. 7. P. 1108–1115 (main co-author, alphabetical order).
- *Anikin A., Gasnikov A., Dvurechensky P., Tyurin A., Chernov A.* Dual approaches to the minimization of strongly convex functionals with a simple structure under affine constraints // *Computational Mathematics and Mathematical Physics*. 2017. V. 57. N. 8. P. 1262–1276.