NUMERICAL METHODS OF OPTIMIZATION

Moscow Institute of Physics and Technology (National Research University)

Degree or qualification is awarded: **PhD (Candidate of Science)**

Language of study: **English**
Mode of study: **full-time**
Duration: **4 years**
Availability of free education: **yes**
Price: **375 000 RUB**

Programme curator: **Denis Ustyuzhaninov**
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Entry requirements:

- Master's degree / equivalent in a related field
- B2 level of English
- Good track record of publications related to the topic of the intended research
- Strong research proposal 1,500 - 3,500 words

Research supervisor:
Alexander Gasnikov
PhD, DSc

Supervisor's research interests:

- Stochastic optimization.
- Accelerated algorithms.
- Superposition of algorithms.
- Mathematical modeling of traffic flows (traffic assignment problems).

Supervisor's specific requirements:

- Mathematical analysis.
- Linear algebra.
- Probability theory.
- Computes Science.
- Python.

Main publications:

- A. Gasnikov, P. Dvurechensky, E. Gorbunov, E. Vorontsova, Daniil Selikhanovych and Cesar A. Uribe Optimal Tensor Methods in Smooth Convex and Uniformly Convex Optimization. Conference on Learning Theory. P. 1374–1391, 2019.
- A. Kroshnin, D. Dvinskikh, P. Dvurechensky, A. Gasnikov, N. Tupitsa and C.A. Uribe. On the Complexity of Approximating Wasserstein Barycenter. Proceedings of the 36th International Conference on Machine Learning, PMLR 97:3530- 3540, 2019.
- Nesterov, Y., Gasnikov, A., Guminov, S., & Dvurechensky, P. (2020). Primal–dual accelerated gradient methods with small-dimensional relaxation oracle // Optimization Methods and Software, 1-38.

Specializations within this programme