DR. NIKOLAI YU. ZOLOTYKH

UNIVERSITY	National Research Lobachevsky State University of Nizhny Novgorod
PROFICIENCY IN ENGLISH	Upper-Intermediate
MAJOR OF PH.D. PROGRAMME	Mathematics & Mechanics
CODE OF PH.D. PROGRAMME	01.06.01
RESEARCH PROJECTS OF PROSPECTIVE SCIENTIFIC SUPERVISOR	**RESEARCH PROJECT TEAM PARTICIPANT:** Scalable networks of artificial intelligence systems for analyzing data of increasing dimensionality, Grant Project № 14.Y26.31.0022
TOPICS FOR PROSPECTIVE PH.D. RESEARCH	• New methods for determining of data dimensionality • Deep learning methods for medical signal processing • Algorithms of multidimensional computational geometry
 Research supervisor: **DR. NIKOLAI YU. ZOLOTYKH,** Professor, Doctor of Science, Physics and Mathematics (Moscow State University)	**RESEARCH AREA:** Machine learning, discrete and computational geometry
	SUPERVISOR'S RESEARCH INTERESTS: Research interests include machine learning (ECG elaboration using deep learning methods, studying of blessing of dimensionality phenomenon etc.), discrete geometry and discrete optimizations (integer points in polyhedra, convic functions), computational geometry (constructing dual representation of convex polyhedron).
	RESEARCH HIGHLIGHTS: • Highly-equipped labs & research environment, including Supercomputer «Lobachevsky». • Grant project involvement. • Cooperation with leading IT-companies (HUAWEI, INTEL, MERA, NVIDIA). • Prospective participation in international joint research projects (French & Italian universities).
	SUPERVISOR'S SPECIFIC REQUIREMENTS: • *strong mathematical and good programming skills;* • *good proficiency in English;* • *motivation & creativity.*
	SUPERVISOR'S PUBLICATIONS (2015-2020): 17 papers (last 5 years) indexed in Scopus/WoS **LATEST PUBLICATIONS:** • Veselov, S.I., Gribanov, D.V., Zolotykh, N.Y., Chirkov, A.Y. A polynomial algorithm for minimizing discrete convic functions in fixed dimension. Discrete Applied Mathematics 283, P. 11-19. 2020 • Bastrakov, S.I., Churkin, A.V., Zolotykh, N.Y. Accelerating Fourier–Motzkin elimination using bit pattern trees. Optimization Methods and Software. 2020 • Moskalenko, V., Zolotykh, N., Osipov, G. Deep learning for ECG segmentation. Studies in Computational Intelligence. 856, c. 246-254. 2020 • Sidorov, S.V., Zolotykh, N.Y. On the Linear Separability of Random Points in the d-dimensional Spherical Layer and in the d-dimensional Cube. Proceedings of the International Joint Conference on Neural Networks. 2019-July, 8852237. 2019

	• Chirkov, A.Y., Gribanov, D.V., Malyshev, D.S., (...), Veselov, S.I., Zolotykh, N.Y. On the complexity of quasiconvex integer minimization problem. Journal of Global Optimization. 73(4), P. 761-788. 2019