Maxim **Mikhaylov**

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Education

ETH Zürich

Master of Computer Science — *September 2023 – Present*

- Current GPA: 5.72/6.00 *(higher is better)*
- Major in Machine Intelligence & minor in Data Management
- Teaching assistant at the Large Language Models course in the spring semester of 2025

ITMO University

Bachelor of Computer Science — *September 2019 – June 2023*

- Graduated with honors, GPA 4.88/5.00 *(higher is better)*
- Received four scholarships
- Thesis topic: *"Development of a Kalman-type algorithm using recurrent neural networks for improved accuracy in nonlinear problems"*

Skills

Programming languages	C++, Python, Rust, Kotlin, Java, Haskell, Lean, Lua, JavaScript
Machine learning	PyTorch, HuggingFace, Keras, Tensorflow, Weights & Biases, OpenAI API, XGBoost, CatBoost, Scikit-Learn
Topological Data Analysis	GUDHI, Giotto, Ripser, Scikit-TDA
Languages	Russian *(native)*, English *(TOEFL iBT 112/120)*, German *(B2 Göethe-Institut)*

Experience

JetBrains Research

Research intern, software engineer — *July 2021 – August 2021*

- Developed a generator of valid Kotlin programs for compiler fuzzing.
- Used the generator to test existing components of a Kotlin compiler fuzzing framework.

Creative Robotics Lab, ITMO University

Software engineer — *December 2016 – August 2019*

- Lead software engineer in multiple projects that won at international competitions — RoboCup and the World Robot Olympiad.
- Developed a neural network for locating dancing robots using a video stream for synchronizing movements.
- Programmed a robot exploring a forest, building a map of the forest, and performing non-invasive tree analysis.
- Developed a novel localization algorithm that uses a downward-facing camera, which was presented at conferences and published.

Honors & Awards

2019	**1st place,** RoboCup Junior OnStage Advanced — SuperTeam	*Sydney, Australia*
2019	**2nd place,** RoboCup Junior OnStage Advanced — Individual Team	*Sydney, Australia*
2018	**Finalist,** Intel International Science and Engineering Fair	*Pittsburgh, USA*
2018	**1st place,** XIV Baltic Science and Engineering Fair	*Saint Petersburg, Russia*
2017	**1st place,** World Robot Olympiad	*San José, Costa Rica*
2017	**1st place,** Russian Robot Olympiad	*Innopolis, Russia*

Publications

Deep Learning Based Kalman Filter for GNSS/INS Integration: Neural Network Architecture and Feature Selection

S. Li, M. Mikhaylov, N. Mikhaylov, T. Pany *2023 International Conference on Localization and GNSS (ICL-GNSS), 2023*

First Real-World Results of a Deep Neural Network Assisted GNSS/INS Kalman-Filter with MEMS Inertial Sensors for Autonomous Vehicle

S. Li, M. Mikhaylov, N. Mikhaylov, T. Pany, M. Bochkati *Proceedings of the 36th International Technical Meeting of the Satellite Division of The Institute of Navigation (ION GNSS+)*

Deep Learning Aided Error-state Kalman Filter for GNSS/INS Integration

S. Li, M. Mikhaylov, T. Pany, N. Mikhaylov *IEEE Transactions on Aerospace and Electronic Systems* (2023)

Control and navigation of forest robot

M. Mikhaylov, I. Lositskii *Proceedings of the 25th Saint Petersburg International Conference on Integrated Navigation Systems (ICINS)*