

# VYACHESLAV BARYSHEV

research on the application of RL in architecture and urban planning

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## EXPERIENCE

Chief Specialist of Urban Planning  
Institute of the General Plan of Moscow

Janry 2022 – Ongoing Moscow

- scientific research work;
- creation of domain-specific datasets, before training generative SD + LoRA models;
- data/geo-location processing, creation and orchestration of ETL processes;
- design and programming of PostgreSQL/PostGIS spatial databases (conceptual, logical, physical model);
- development of client applications for databases (PyQt, PyQGIS);
- development of plug-ins for qgis;
- web application development, web mapping;
- creation of programming API interfaces, including for integration with qgis plugins;
- mathematical modeling of traffic/pedestrian flows;
- preparation of analytical reports, modeling and forecasting;
- development of machine learning models (classical ML, DL, RL);
- model implementation (inference, model monitoring);
- participation in the development of corporate software products and their testing (plug-ins, individual applications);
- development of methodology, publication of scientific articles, participation in conferences;
- support of the activities of production units

Architect-Lead Architect  
PIK and andere company

Month 2008 – 2022 Moscow

- urban planing
- AR concept
- bim template and coordinire
- work dokument AR
- Project AR
- Architeckter Interior

## LANGUAGES

Russia ● ● ● ● ●

German ● ● ● ● ●

English ● ● ● ● ●

## MOST PROUD OF

Generation and optimization of the architectural appearance of buildings using diffusion models trained by the RLHF method

Development of applications for inference of ML models in QGIS

Architectural design and development of urban planning concepts, development of mathematical models

### STRENGTHS

Hard-working Eye for detail  
Motivator & Leader Innovation-friendly

C++ Python  
PostgreSQL& Postgis  
Docker Apache Sparck  
Apache Airflow Kafka & RabbitMQ  
Apache Superset & Datalens  
Embedded Systems  
Statistical Analysis Probability Theory

## EDUCATION

M.Sc. Applied Mathematics and Computer Science

National Research Nuclear University "MEPhI",

Sept 2024 – June 2026

Sp. Architecture  
State University of Land Management  
Sept 2007 – June 2011

Sp. Management of organizations  
Moscow State University of Design and Technology  
Sept 2002 – June 2007

## PUBLICATIONS

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### Journal Articles

- BaryshevV.V., "Micro-modeling of pedestrian flows to traffic concentration points," *ARCHITECTURE AND CONSTRUCTION OF RUSSIA*, vol. 2, 2024.
- B. MarkusM.V., "The impact of remote work on the organization of settlements and the principles of implementing the concept of a 15-minute city in a metropolitan suburb," *ARCHITECTURE AND CONSTRUCTION OF RUSSIA*, vol. 2, 2024.
- BaryshevV.V., "Social groups in the formation of demand for the services of transport systems," *INNOVATION AND INVESTMENT*, vol. 7, 2023.
- BaryshevV.V., "Synthetic populations in the formation of urban areas," *ARCHITECTURE AND CONSTRUCTION OF RUSSIA*, vol. 2, 2023.

### Conference Proceedings

- BaryshevV.V., "Forecasting the attendance of public spaces based on the bayesian network and updated data streams," in *Current aspects of urban planning. New Philosophy of Urban Development*, Moscow, Russia, 2025.
- BaryshevV.V., "Digital methods of urban planning analysis in the formation of scenarios for the development of pedestrian space," in *SCIENCE, EDUCATION AND EXPERIMENTAL DESIGN Abstracts of the international scientific and practical conference of faculty, young scientists and students on April 4-8*, Moscow, Russia, 2022.

## REFEREES

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