

Pavel Repnikov

Location: Moscow, Russia

GitHub | Email: prepnik@mail.ru | Mobile: +79888639559

TECHNICAL SKILLS

Languages : C++, Python, SQL

Frameworks : Unreal Engine, Unity, Pytorch

Libraries : numpy, pandas, PySpark, XGBoost, LightGBM, CatBoost, numba, sklearn, geopandas, SciPy, PySR, PyClustering

WORK EXPERIENCE

Data Scientist Intern Oct 2023 – Present
Sberbank, Risk Modelling Research *Moscow, Russia*

- Geolocation data. Geolocation data in fraud prevention.
- Behavior modeling. Probabilities of events as a new way of explaining incidents.

EDUCATION

Lomonosov Moscow State University 2022-2024
MSc in Physics, Chair of Mathematical Modeling and Computer Science *Moscow, Russia*

Lomonosov Moscow State University 2018-2022
BSc in Physics, Chair of Mathematical Modeling and Computer Science *Moscow, Russia*

PROJECTS IN DEVELOPMENT

Adaptive metabolic model

- Monte Carlo simulation
- Time series clustering

Adaptive control system with fuzzy logic based on Bayesian inference

- Cross-entropy method for reinforcement learning
- Creating a greedy optimization algorithm for physical simulation
- Creating an analogue of the gradient descent algorithm in the function space

COMPLETED PROJECTS

Forecasting global population dynamics	<i>Python, numba, geopandas</i>	source code
<ul style="list-style-type: none">• Partial differential equations as a way to predict the population on the globe• Modification of the classical formulation of the problem taking into account spatial components• A solution on a set of arbitrary shape		
Credit Scoring on a synthetic dataset	<i>Python, XGBoost, LightGBM, CatBoost, PyClustering, SciPy</i>	source code
<ul style="list-style-type: none">• The divide and conquer principle. Building models independently for different years• Automatic feature generation• Testing statistical hypotheses• Clustering of tabular data		
Furniture object detection	<i>SQL, C#, Unity, Python, Pytorch</i>	source code

- Creating a synthetic dataset using Unity
- Object detection finetuning using Pytorch

Bayesian Decision Making as a Theoretical Basis for a New Look at Fuzzy Logic Control *Python, Pytorch* [source code](#)

- Creating a new machine learning white-box model from scratch
- Creating a fuzzy inference system based on statistical inference
- Solving a system of integral equations using Pytorch

Machine learning of noise filtering of vibroacoustic linearly distributed sensor data *Python, TensorFlow* [source code](#)

- Creating an optimal signal filter for recognizing different types of activity