Pavel Repnikov

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Technical Skills

Languages	:	C++, Python
Frameworks	:	Unreal Engine, Unity, Pytorch
Libraries	:	numpy, pandas, SciPy, PySR, PyClustering, XGBoost, LightGBM,CatBoost,numba, sklearn
Auxiliary tools	:	HTML, CSS, javascript, SQL

Education

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

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

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

Credit Scoring on a synthetic dataset *Python, XGBoost, LightGBM, CatBoost, PyClustering, SciPy* source code

- The divide and conquer principle. Building models independently for different years
- Automatic feature generation
- Testing statistical hypotheses
- Clustering of tabular data

Furniture object detection *SQL,C#, Unity, Python, Pytorch* 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