Shpileva Anastasiya

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2020 - 2023 I am actively studying several areas of mathematics. A wide variety of fundamental mathematical disciplines covered in depth, such as **linear algebra, mathematical analysis, discrete mathematics, differential equations, methods of optimization, mathematical statistics**.

Skills

Programming Languages	Java, Python, Bash, C++, JavaScript, LaTeX.
Testing tools	Flask.
Machine Learning and Data Science libraries	PyTorch, XGBoost, Sklearn, PySpark.
Web programming	Spring, Vue.js, MariaDB, Maven.
Communication	English - B2, Italian - A2

Work Experience

Intern analyst / Python **February 2023 — April 2023**
NVI-Research

- Time series analysis (tools: PyTorch, XGBoost).
- Data engineering (tools: PySpark)
- Using "Flask" for testing.

Laboratory assistant / Python **November 2023 — Until now**
ITMO University

- Building a dataset using **NLP** and **CV** algorithms.
- Development of a method for automatic evaluation of the originality of a vector image
- Development of a method for vectorizing a bitmap image with a variable number of curves.
- **Tools**: NumPy, PyTorch

Technical experience

RUBIK'S CUBE GRAPHICAL USER INTERFACE / C++ **May 2021 — May 2021**
ITMO University

- Implementation of a program simulating the assembly of a 3x3 Rubik's Cube.
- Application GUI Implementation (tools: OpenGL Utility Toolkit).

IMPLEMENTATION OF CODEFORCES / Java **September 2022 — December 2022**
ITMO University

- Tools: Java, JavaScript, Vue.js, Git, Spring Boot.
- Development of a prototype of the Codeforces website, with basic functionality: registration, identification, writing comments, publishing posts, storing data of each user.

METHODS OF OPTIMIZATION / Python **February 2023 — June 2023**
ITMO University

- Tools: NumPy, MatPlotLib, PyTorch (for last laboratory)
- As part of the course, I implemented all effective varieties of gradient descent: Nesterov, Momentum, AdaGrad, RMSProp, Adam, as well as such quasi-Newtonian methods as Gauss-Newton, Powell Dog Leg, BFGS and L-BFGS.

TEXT GENERATION/ Python **November 2023 — November 2023**
ITMO-University

- Writing my own RNN and LSTM algorithms.
- **Tools:** NumPy, PyTorch.

SELF-CLUSTERING: Implementation of DBSCAN / Python **December 2023 — December 2023**
ITMO-University

- Implementation of the algorithm **"DBSCAN"** with subsequent training and testing.
- Data markup using CLIP and BLIP algorithms.
- **Tools:** NumPy, torchvision, CLIP, BLIP.

Education

Applied mathematics and computer science, *ITMO University* **September 2021 - June 2025**