# Sergey Litvinov

## Data Scientist

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## About

I have physical background, mainly tied with time series and signal processing.
For three years i've been studying machine learning from different angles: mathematics, business problems, data analysis, algorithms and so on.

I have experience in building, setting training pipelines, tuning hyperparamters and deploying custom Machine Learning, Deep Learning solutions.
Projects I have worked on include Image Classification, Segmentation, Detection, machine learning regression, classification, clusterization.

From various courses, books, practice and Kaggle competitions i've learn a lot about advanced statistics, programming with Python, data retreival and processing with SQL as well as data visualization with Matplotlib, Seaborn, dashboards.

## Work Experience

### GeoPrime - Senior Geophysicist

May 2017 - Feb 2023

- Seismic data analysis and preprocessing
- Signal processing and modeling
- Statistical attribute analysis
- Project management

## Projects

### SQL - Clique Bait

Feb 2023 - Feb 2023

- The goal of the project is to analyse and calculate funnal fallout rates for Clique Bait online seafood store. The project is based on 8weeksqlchallenge.com case.

  Project includes:

  - Setting up PostgresSQL server
  - Creating project database and loading schemas with input tables
  - Digit analysis
  - Product funnel analysis
  - Campaigns analysis

Feb 2023 - Feb 2023

## SQL - Fresh Segments

- The goal of the project is to analyse and calculate funnal fallout rates for Clique Bait online seafood store. The project is based on 8weeksqlchallenge.com case.

  Project includes:

  - Setting up PostgresSQL server
  - Creating project database and loading schemas with input tables
  - Digit analysis
  - Product funnel analysis
  - Campaigns analysis

## Advertising A/B testing

Jan 2023 - Jan 2023

- Conduct an A/B test of advertising design for marketing campany.

  Project includes:

  - Analysis of data
  - Fisher exact test
  - Confidence interval calculation

## Pleural-Effusion-Detection

Dec 2022 - Dec 2022

- I tried to predict pleural effusion on MRI scans. This is an image segmentation problem. Project includes preprocessing data in special format used in medicine, training U-net for segmentation, tracking with Tensorboard. For quality measurements DICE metric was used.

  Project includes:

  - Preprocessing input images
  - Train Unet model with transfer learning for image segmentation
  - Build web app with Flask framework
  - Perform model tests and analyse results with Tesnorboard

## Image-to-image: Convert photo to Monet-like painting

Oct 2022 - Oct 2022

- Web application for converting photo images into Monet-like paintings using CycleGAN network. Gradio framework was used for web application.

  Project includes:

  - Create custom data class
  - Build, train and tune CycleGAN neural network for style transfer
  - Create web app using Gradio framework
  - Deploy app with Docker

## Dog image classification Web app and Telegram bot

Sep 2022 - Sep 2022

- Web application and Telegram bot for dog breed classification. In th project pre-trained Resnet50 was used for training, Flask framework - for web application. Quality of the model prediction was measured by accuracy and confusion matrix.

  Project includes:

  - Create custom data class
  - Train ResNet50 model for image classification with transfer learning
  - Build web app with Flask framework
  - Deploy app with Docker
  - Create Telegram bot for image classification

## Education

### **Lomonosov Moscow State University** - Seismometry and geoacoustics

Sep 2016 - Jun 2018

### **Lomonosov Moscow State University** - Bachelor degree, Engineering Geology and Geophysics

Sep 2013 - Jun 2016

### **Yandex Praktikum** - Data Science Specialist, Data science

May 2020 - March 2021

**Awards**

- Prize-winner in hackaton held during Intellectual Data Analysis in Oil and Gas conference

**Relevant courses**

- **Inferential Statistics** | Duke University
- **Mathematics for Machine Learning: Linear Algebra** | Imperial College London
- **Introduction to Computer Vision and Image Processing** | IBM Skills Network
- **Deploying Machine Learning Models in Production** | DeepLearning.AI
- **Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization** | DeepLearning.AI
- **Neural Networks and Deep Learning** | DeepLearning.AI
- **Introduction to Data Engineering** | IBM Skills Network
- **Structuring Machine Learning Projects** | DeepLearning.AI
- **Introduction to Machine Learning (ML) for Geophysical Applications** | Learning Geoscience
- **Introduction to Big Data with Spark and Hadoop** | IBM Skills Network
- **Introduction to Git and GitHub |** Google

## Skills

## Programming Languages

- Python (Numpy, Pandas, Matplotlib, Scipy, Scikit-learn, Pytorch, OpenCV)
- SQL

## Data science

- **Machine learning**: linear models, xgboost, random tree
- **Deep learning**: computer vision image-to-image, segmenation, object classification, detection
- Data visulization and analysis

## Version Control and Deploying

- MLflow
- Git
- Docker
- Flask
- Gradio
- Tensorboard

## Language

- **Russian** - native
- **English** - advanced