Ilia Shabanov

Machine and Deep learning | Web parsing

07.05.2003 | Moscow ⬤ shabashaash ✉ shabanov91@gmail.com 📞 89151829242

Projects

ROFLECT | Python | PyTorch | ONNX | Vue3 | WASM
2021

→ SPA on Vue3 with Composition API. Converting models to ONNX and running them in parallel on WASM together with the UI. Hosting on Firebase.

PRODUCTION READY СЕГМЕНТАЦИЯ ИЗОБРАЖЕНИЙ ПРОВОДА | Python
2021

→ Segmentation of 18 classes of cables and their insulation on an industrial scale. Needed to achieve maximum effectiveness of the model in a limited time.

TEXT AND VOICE GENERATION FOR VK BOT | Python | vk_api | PyTorch | Keras
Part of the team
2020-2021

→ Working with GPT-2 (345M) for text generation, and with TacoTron2+WaveGlow (later Grad-TTS+Waveflow due to sound quality) for sound generation, creating your own datasets in Russian language.

PYTORCH IMPLEMENTATION OF DE:TR | Python | PyTorch
2020

→ At the time of publication of the article, the code for the model was unavailable. But the authors provided a general explanation of the model and some code snippets in the article. Application of this model in Google Landmark Retrieval on Kaggle.

GAMEABOUTLIFE | C++ | SFML
2020

→ Pet project, JFF. A simple cellular automaton with the ability to transmit genes to offspring. Improving the skills of working with graphical frameworks in C++.

AI CRAWLER | Python | XGBoost | Django | PostgreSQL | JS | Heroku/OpenShift
2020

→ Graduation project at the Lyceum of FU. A BS4 and Selenium-based web parser that uses the XGBoost classifier to determine the appropriate elements on the page. Working with an unbalanced dataset. The backend is written in Django. Frontend is a Chromium-based browser extension. Hosting on Heroku, later on OpenShift.

NROS | Python | Keras | Django | PostgreSQL | Vue
Part of the team
2020

→ Graduation project from the MSHP courses. CRM is a system using a genetic algorithm with an LSTM predictor to predict future demand at specific retail outlets for all-seasonal goods, and for seasonal goods , Holt-Winters forecasting. Creating a part of the backend, developing a database schema and studying scientific articles about Min Max optimization and genetic algorithms.

Skills

PROGRAMMING

>5000 lines:
Python • C++ • JavaScript

<5000 lines:
Golang • C# • C

Familiar:
TypeScript • Shell • SQL • LAT$_E$X • Nim

LIBRARIES/FRAMEWORKS

TensorFlow|Keras • PyTorch • XGBoost|CatBoost|LightGBM • Pandas|NumPy • BS4|Selenium • TS.js • ONNX • Vue3 • Django|Flask

TOOLS/PLATFORMS

Git • Webpack • Firebase • Heroku • OpenShift

Education

MOSCOW SCHOOL OF PRO-GRAMMERS
Ind. programming
2017 - 2020 | Moscow

LYCEUM OF THE FINANCIAL UNIVERSITY
Technological profile
2019 - 2021 | Moscow

FINANCIAL UNIVERSITY UNDER THE GOVERNMENT OF THE RUSSIAN FEDERATION
Bachelor's in Computer Science
Sep 2021 - Present | Moscow
Department of Data Analysis and Machine Learning

Graduation work

MSHP
NROS •
LYCEUM FU
AI CRAWLER •
BACHELOR COURSE
Artificial intelligence •

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COMPETITIONS

RAIFHACK | PREDICT THE PRICE OF REAL ESTATE BASED ON TABULAR DATA
Part of the team
2021

→ The task of forecasting the cost of commercial real estate. It was complicated by a large number of types of real estate and features, as well as the presence of the time attribute in the data. The main problems were related to data processing and the search for killer features. Model stacking and preprocessing of tabular data with time features. Used regression stacking from various libraries (XGBoost, CatBoost, LightGBM, linear models from scikit-learn), as well as FCN.

ROBOFEST | AUTONOMOUS ROBOT WITH COMPUTER VISION
Part of the team
2020-2021

→ Creating a self-controlled robot that can correctly recognize colors and numbers from the image on the cameras. Development of an algorithm for real-time recognition, organization of communication between Raspberry Pi and Arduino and flashing the camera module and Arduino with custom software. Creating a server and client part of a multiplatform application for transferring images from a robot to devices by a judge. The result is a prize-winning place.

ONTI AI CHALLANGE | PREDICT "COOLNESS" BASED ON TABULAR DATA OF THE IBAD PROCESS
Part of the team
2020-2021

→ Using new methods of data preprocessing, running heavy Keras models in conditions of limited RAM and working with a relative goal for forecasting. Using regressions and various variations of FCN and LSTM. Google Cloud as a platform for launching stacked models.

ONTI AI CHALLENGE | PREDICT FUTURE SPENDING BASED ON TABULAR DATA
2019-2020

→ Creating an algorithm that, based on historical data on customer transactions, will be able to predict the total expenses of each customer in the next month. The result of the competition is reaching the semifinals. Selection of the data processing model and type. 15th place after the final make-up. Comparison of a variety of approaches, from boosting and linear models to processing tabular data as time series and using LSTM models.

AWARDS

2021	3^d	Robofest
2021	Finalist	PhysTech Physics
2021	Finalist	PhysTech Mathematics
2021	Finalist	RaifHack
2021	Finalist	ONTI AI Challenge
2020	Semifinalist	ONTI AI Challenge

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LYCEUM OF THE FINANCIAL UNIVERSITY
TECHNOLOGICAL PROFILE
2019 - 2021 | Moscow

FINANCIAL UNIVERSITY UNDER THE GOVERNMENT OF THE RUSSIAN FEDERATION
BACHELOR'S IN COMPUTER SCIENCE
Sep 2021 - Present | Moscow
Department of Data Analysis and Machine Learning

GRADUATION WORK

MSHP
NROS •
LYCEUM FU
AI CRAWLER •
BACHELOR COURSE
Artificial intelligence •