# Yulia Yakovleva

*Software engineer*

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## Experience

November 2021 – Now
**Machine learning engineer**, *Descriptor.ai*, Remote/Moscow.
- Sound data processing with deep learning models (Python, NumPy, TensorFlow, Keras, Sound data).

July 2021 – October 2021
**Machine learning engineer**, *MediaZona*, Remote/Moscow.
- AI Text Generation (NLP, Python, NumPy, TensorFlow, Keras, Transformers, GPT): I worked on conditional text generation with neural networks. My responsibilities included both engineering/coding and interaction with non-tech employees of MediaZona on translating their non-tech requirements into "tech language", finding the data and getting a feedback on text generators' work.

March 2018 – May 2021
**Software engineer**, *Yandex Self-Driving Cars*, Moscow.
- Sensor diagnostics software (ROS, C++, Python, NumPy): I created data quality checking software modules for cameras and LiDARs.
- Traffic lights recognition software (ROS, C++, Python, NumPy, TensorFlow, Keras).
  - I worked on improvement of traffic lights recognition and tracking pipeline,
  - learning data mining, pre-processing and datasets preparation,
  - created, learned and deployed multiple iterations of deep neural networks, which are working now on hundreds of self-driving cars made by Yandex.

August 2017 – March 2018
**Software engineer**, *Unemployed/Self-employed*, Moscow.

October 2015 – August 2017
**Robotics researcher/developer**, *Institute for Information Transmission Problems RAS (Kharkevich Institute)*, Moscow.
- Self-driving car prototype positioning and control software. I created or worked on the following modules:
  - System launch tool to replace ROSLaunch (Python, ROS, Paramiko);
  - Local positioning system (C++, Eigen, Kalman filters);
  - Trajectory control system (C++, ROS);
  - Developers' web-interface (Python, JS (Leaflet.JS, Bootstrap), ROS);
  - Road markup-relied localization system (C++, ROS).
- Initiative works in deep learning for robotics control (just for fun).

June 2015 – October 2015 **Junior web-developer**, *WETA Group*, Remote.
Full-stack web-development
- Information security system web-interface:
  I developed two web-applications using Django non-rel backend and JS frontend with MongoDB database;

July 2013 – June 2015 **Junior control systems developer**, *Modern Signal Processing and Control Technologies R&D Laboratory*, Chelyabinsk.
- Turboshaft engine control system development:
  - I performed Turboshaft math modelling using MATLAB/Simulink,
  - participated in control system design, test stands assembling and commissioning;
- Self-driving car prototype trajectory control system:
  - I proposed control algorithms and performed math modelling using MATLAB/Simulink,
  - implemented these Algorithms (C++, control unit with STM32 and NuttX RTOS),
  - performed HIL testing using Python and NumPy and participated in field tests.
- I developed UAV test stand software: Scilab, interaction with National Instruments data acquisition system.

September 2012 – June 2015 **Laboratory assistant**, *South Ural State University*, Chelyabinsk.
Control systems research.

## Talks

**Traffic Lights in Yandex Self-Driving Cars**, *Presented at Yandex Self-Driving Meetup 2019, PyLadies Moscow and PyLadies Kazan.*
A short talk in Russian about the difficulties of traffic lights recognition and about Yandex Self-Driving Cars traffic lights recognition pipeline.

**Myths about Self-Driving Cars**, *Presented at WTM Moscow.*
An interactive talk in Russian about self-driving cars architecture, sensors and testing.

**Data mining in Yandex Self-Driving Cars**, *Presented at Pytup Moscow.*
A short talk in Russian about data processing pipeline in Yandex Self-Driving Cars project.

## Volunteering

May 2020 – now **Web developer/data analyst**, *OVD-Info*, Remote/Moscow.
OVD-Info if an independent human rights media project. I'm participating in development of information collection and analysis system for OVD-Info using SQL, Python and Django.

## Education

2010–2015 **National Research South Ural State University**;
Computer Technologies, Control and Radio Electronics Faculty;
Automation and Control Department;
MEng with honours.

2015–2017 **Moscow Institute of Physics and Technology (State University)**;
Deparment of Innovation and High Technologies;
Cognitive technologies sub-faculty;
MSc in Computer Science.

## Languages

Russian Native speaker

English Intermediate

German Beginner

Tatar Beginner

## Skills

### Main:

C++ (Eigen), Python (Jupyter, NumPy, Keras, Sklearn), Git, ROS, Linux, Machine Learning, Computer Vision.

### Experience with:

Bash, C, OpenCV, JS (some outdated frameworks), Django, Docker, LaTeX, Dynamic systems math modelling, Matlab/Simulink.

## Pet projects

**rTerm**, *github.com/robolamp/rTerm*.
Fake JS-based UNIX term for my personal page.

**Random three body problem bot**, *github.com/robolamp/3_body_problem_bot*.
A program which is simulating the behavior of random three body system multiple times and publishing animation of the most interesting one every 12 hours at Telegram channel.

## Interests

Space, alpine skiing, cross-country skiing, bicycling.