Yulia Yakovleva

Software developer

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Experience

March 2018 – Now — **Software engineer**, *Yandex Self-Driving Car*, Moscow.

- Self-driving car perception software:
  - Sensors diagnostics (ROS, C++, Python, NumPy): Simple data quality checking software modules for cameras and LiDARs.
  - Traffic lights detection (ROS, C++, Python, NumPy, TensorFlow, Keras). Traffic lights recognition and tracking pipeline; learning data mining and pre-processing; creating, training and deployment of deep learning models.
- Talks about Yandex Self-Driving Car project:
  - Traffic Lights in Yandex Self-Driving Cars;
  - Myths about Self-Driving Cars;
  - Data mining in Yandex Self-Driving Cars.

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 positioning and control software:
  - System launch tool to replace ROSLaunch (Python, ROS, Paramiko): Just a more flexible tool than ROSLaunch.
  - Local positioning system (C++, Eigen, Kalman filters): Extended Kalman filter and rollbacks/roll-ons to use measurements with various delays.
  - Trajectory control system (C++, ROS);
  - Developers' web-interface (Python, JS (Leaflet.JS, Bootstrap), ROS): Interactive tool that allows to correct positioning and control route passing.
  - Road markup-relied localization system (C++, ROS): A system that uses recognized road markup and road features map for positioning.
  - Field testing;
- 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
- Security system web-interface development: Two web-applications were developed using Django non-rel backend and JS + Backbone.JS + Marionette.JS + Raphaël.JS frontend with MongoDB database;

July 2013 – June 2015 **Control systems developer**, *Modern Signal Processing and Contol Technologies R&D Laboratory*, Chelyabinsk.
Control systems development.
- Turboshaft control system:
  - Turboshaft math modelling using MATLAB/Simulink;
  - Design, assembling and commissioning of turboshaft control system control cabinets;
- Autonomous car trajectory control system:
  - Control algorithms development and math modelling using MATLAB/Simulink and VisSim;
  - Algorithms implementation (C++, control unit with STM32 and NuttX RTOS);
  - Car control system test bench software development using Python 2.7 with NumPy and UDP;
  - A bit of HIL and field tests;
- UAV test bench software: Scilab, interaction with National Instruments data acquisition system.

January 2012 – June 2015 **Laboratory assistant**, *South Ural State University*, Chelyabinsk.
Participated in research works.

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 old frameworks), Django, Docker, LaTeX, Dynamic systems math modelling, Matlab/Simulink.

Interests

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