Yulia Yakovleva

Robotics developer, researcher

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Experience

October 2015 – October 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-application 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:
  - Participated in car control system structure development;
  - Control algorithms development and math modelling using MAT-LAB/Simulink and VisSim;
  - Algorithms realization (C++, control unit with STM32 and NuttX RTOS);
  - Car control system test bench software development using Python 2.7 with NumPy and UDP;
  - Participated in commissioning, 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
Polish	Beginner

Skills

Main:

C++ (Eigen, Boost), Python (Jupyter, NumPy, Sklearn, Paramiko), Matlab/Simulink, Git, ROS, Linux, Dynamic systems math modelling.

Experience with:

Bash, C, OpenCV, JS (Underscore.JS, Backbone.JS, Leaflet.JS), MongoDB, Django, Machine Learning, Computer Vision, Docker, LaTeX, SciLab, VisSim.

Miscellaneous

Interests

RC airplanes and quadrotors, skiing, bicycling.