Ivan Kharitonov

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I am interested in a research/software engineer position in self-driving and robotics. Especially connected with deep learning.

Education

2008 – 2014	**MS + BS** (electrical engineering) at **Bauman Moscow State Technical University**
2016	Data Mining in Action course (open ML course at MIPT)
2017 – 2019	**Yandex School of Data Analysis** – Computer Science track
2019, 2021	Summer school "Control, Information, Optimization"
2020	Waymo workshop for FSG Academy - certificate
2021	Third HSE-Yandex autumn school on generative models - info

Teaching

spring 2019-2022
Yandex DA school

Teaching assistant for the course Practical RL Provided help and read seminars with hw checkups in HSE and YSDA

Professional Experience

Aug 2020 – now
Sberbank
Sberautotech

Software engineer

- Perception: Implemented models for point-cloud based object detection task.
- Multi-object tracking:solve object tracking problem using random finite set statistics. Developed python library for tracking scenarious and multi-object tracking algorithms.
- I organize weekly research papers reading seminars. Several ideas from these seminars found themselves in the production models.

Using: numpy, scipy, mpl, torch-torchscript, hydra, ROS2, Docker, Python, gitlab-CI

Jul 2015 – Nov 2017
FSUE NAMI
Central Scientific Research Automotive Institute – Information and Intelligent Systems Center

Research engineer at self-driving department (Shuttle project)

- Implemented perception models for object detection task – collecting/generating training data, optimizing the model design, model implementation (Caffe DL framework) and evaluation.

Software developer (Control systems) at transmission control systems department (Aurus project)

- System identification – created plant models for some vehicle mechanism, such that gearbox clutch hydraulic actuator.
- Implemented basic software layer for automotive microcontroller (C, Simulink, Altium Designer) from scratch.
- Designed and implemented a controller for hydraulic actuators with further improving quality metrics and decreasing system setting time.
- Decreased calibration time by developing automated calibration procedure of control system parameters and tested control algorithms on the testbench.

Using: MATLAB, Simulink, Vector CANAPE

Mar 2013 – Aug 2015 **BMSTU** **Bauman Moscow State Technical University**	Hardware and telemetry engineer on an FSAE team. Participated in international engineering competition FSAE as a member of the university racing team. Responsibilities: hardware and software development, sponsorship and partnership management. Achievements: ◦ Released projects: MS thesis – using RTK navigation for telemetry, F1-like steering wheel with integrated LCD, wireless telemetry module, signals expansion module by reverse-engineering the race ECU CANbus protocol. ◦ Received positive feedback from judges on the design event with good score. ◦ Established sponsorship contracts with several companies. As a result, we were granted new equipment.
Feb 2012 – Jul 2013 **Crypto LLC** **Systems integrator**	Engineer at System Integration Department. ◦ Adapted the product to the customer by adding fault tolerance setup. ◦ Integrated the monitoring tool (Zabbix) with a data management system.
May 2009 – Feb 2012 **PJSC VimpelCom**	Test Engineer. The Vimpelcom's pilot project - TV provider for mobile phones. ◦ Monitoring of the head and base stations (DVB-H) and 2nd level technical support.

Generall Skills

Programming	Python (numpy, scipy, pytorch, jax, pytest, poetry, nox) MATLAB, C++
Base tools	git, ssh, unix, latex , Docker, dvc
Other tools	CI/CD (github actions), ROS2, xpra
Engineering tools	Altium Designer, Solidworks, LabView, Simulink, Vector software (CANape)
Speaking	Russian – Native, English – B2

Activities

Formula Student	design judge FSAE AI UK 2020 design judge bay chief Formula Student Russia 2020 design judge (driverless - perception) Formula Student Germany 2021 design judge bay chief Formula Student Russia 2021
Motorsport	Flag Marshal 2020 Formula One Sochi Gran Prix , 2020 Russian Circuit Racing Series Scrutineering, data analysis 2021 Russian Circuit Racing Series Scrutineering 2021 Russian Hot Hatch Club Championship Scrutineering F2/F3 2021 Formula One Sochi Gran Prix
Sports	road bicycle racing, boxing
Other activities	organized reading club about robotics and self-driving at BMSTU