Hi, Daniil here

I'm a student from Russia

On my way to becoming a full-stack Robotics Engineer

I'm interested in Machine Learning and Computer Vision, Behaviour and Path planning, clean code creation, product design and pipeline automation for Robotics

code: github.com/Sarrasor
telegram: @Sarrasor
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Tech stack

Experience

Research fellow @ Innopolis Robotics lab

Oct 2020 - Present

Working on self-driving car behaviour planning for my Bachelor's thesis

Machine learning engineer @ Inference technologies

Jul 2020 - Oct 2020

This was a summer internship with an extension. Built an automatic pipeline for machine learning model training. After that, applied it for object segmentation and classification tasks

- Worked on the pipeline architecture creation
- Tinkered with several SOTA classification, segmentation and detection models from Tensorflow Zoo
- Cleaned noisy datasets

Computer vision and control engineer @ Innopolis Eurobot team 2019

Sept 2019 - Jun 2020

Took part in the preparation to the Eurobot 2019 competition:

- Implemented CNN plastic cup detection and 3D point cloud orientation recognition
- Implemented ArUco marker robot localization
- Combined localization with ROS dynamic window planner into a planning module
- Created Gazebo simulation of the competition field for testing purposes
- Calibrated and denoised several cameras

Research fellow @ Innopolis Robotics lab

Jan 2019 - Sept 2019

Did several projects during that time:

Robotic ball catcher project

The idea of the project was to use a robotic manipulator with a sack to catch a ball

- Implemented ball 3D position detection with the use of Computer Vision
- Implemented Kalman Filter for ball landing spot prediction
- Controlled UR manipulator arm via Python code

Camera stabilization project

Summer internship project. Stabilized a camera on a multi legged centipede robot

- Used ICP algorithm fused with IMU and visual odometry for pose estimation
- Smoothed camera path with spherical linear interpolation and crop window approach
- Acquired a patent and wrote a paper draft

3D scanner project

We have created a design of a 3D scanner based on a robotic manipulator

- Calculated FK and IK for a robotic manipulator and simulated it in Matlab
- Used point clouds from Kinect 2 to reconstruct a 3D model of an object
- Used photogrammetry technique to reconstruct a 3D model of an object

Education

Innopolis University

Bachelor's Degree
2018-2022

Robotics track

Personal Info

21 y.o. male from Russia

Like going to the gym, playing guitar, and drinking tea with mint while reading

Languages

Russian: Native
English: B2

Pet-projects

I like writing educational articles. I've got more than 180 thousand views on my Introduction to Arduino course (russian). Occasionally writing robotic kits reviews and tutorials for supereyes.ru

Currently I'm working on the Robotics Engineer Roadmap project. The idea is to create a guide on what skills a robotics engineer has to have and how to become one of them

Competitions

- First place in the 2017 RRO Advanced Robotics Challenge. The task was to build a robot that is able to play tetris
- Best project of Robotics Summer School 2019 in Innopolis. We have created a robot arm that catches a ball