

# ALEXEY KASHAPOV

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Location: Moscow, Russia

github.com/alexey-kashapov

## EXPERIENCE AND INTERNSHIPS

### Visiting student

#### MIT CSAIL, HCI Engineering

November 2019 - Present Cambridge, MA

- Proposed a solution for an object pose estimation for the research PhotoChromeleon
- Implemented an algorithm for a pixel to pixel projections matching between two projectors on various positions

### Software Developer Intern

#### WareVision

June - August 2019 Moscow, Russia

- Built a behavior tree for Mobile Platform and Drone
- Implemented a motion planner node for Mobile Platform
- Made a protocol interaction between high-level Intel NUC and low-level STM32f4

### Robotics Software Developer

#### Eurobot 2019 Competition

October 2018 - June 2019 La-Roche-sur-Yon, France

- Developed a real-time computer vision algorithm for object recognition using U-Net, OpenCV, Scikit-Image, python
- Built a behavior tree for Autonomous Mobile Robot
- Made a protocol interaction between high-level Odroid XU4 and low-level STM32f4 on the Odroid XU4 side

## RESEARCH

3D Mask R-CNN. Neural network for object instance segmentation on color image and depth map

#### MIT, Mechatronics Research Laboratory

September 2019 - Present Cambridge, MA

- Built a new deep learning architecture for instance segmentation on color images and depth maps - 3D-Mask R-CNN
- Collected and annotated dataset with the most accurate 3D camera in the world - Zivid OnePlus S
- Trained 3D-Mask R-CNN with collected data

Network interface of the scintillation crystals research board

#### Budker Institute of Nuclear Physics

September 2017 - June 2018 Novosibirsk, Russia

- Implemented FPGA-design for SoC Zynq-7000, which was the main board control device
- Configured and built Linux-based system for Zynq-7000
- Developed website, which was worked on the ARM Cortex™-A9 of Zynq-7000, to control the board

## EDUCATION

### Master degree

#### Skolkovo Institute of Science and Technology

expected June 2020 Moscow, Russia

- Major: Information Systems and Technologies (GPA 4.9/5.0)
- Related coursework: Information and Coding Theory, Control Systems Engineering, Systems Engineering, Robotics

### Bachelor degree

#### Novosibirsk State University

Aug 2014 - June 2018 Novosibirsk, Russia

- Major: Physical and Technical Informatics (GPA:4.7/5.0)
- Related coursework: Mathematical analysis, Functional analysis, Differential equations, Probability theory and statistics, Discrete Math, Object Oriented Programming, Network technologies, Operating Systems

## SKILLS

#### Programming:

Python, C++, C, Java, MySQL

#### Tools&Frameworks:

ROS, OpenCV, PyTorch, Blender, Scikit-Image, Numpy, Django, Unix OS

## HONORS & AWARDS

- Skoltech's academic mobility grant
- Eurobot Open 2019 Finals, **Runner-up**
- National stage Eurobot Open 2019, **Winner**
- Skoltech's president stipend
- Russian National contest "I am a professional" in direction of Computer Science, **Medalist**

## ACTIVITIES

### Team mentor

#### Eurobot Open 2020

October 2019- present

- Gave advice to the team to build a pipeline of the work
- Helped to build a computer vision algorithm for the project