# **ANTON EGOROV**

### 3D localization and mapping with DL implementation in Robotics

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**♀** Innopolis, Russia

% https://antonskoltech.github.io/

• https://github.com/Antonskoltech

in https://www.linkedin.com/in/antegorov/

## **WORK EXPERIENCE & INTERNSHIPS**

#### Research Engineer in SLAM team

#### Autonomous Transportation Systems Lab, Innopolis University

Mov 2020 - present

♥ Innopolis, Russia

- LiDAR odometry implementation for self-driving vehicle mapping and localization
- Teacher Assistant in Mobile Robotics and Autonomous Driving course (Fall 2020)

## **R&D Intern**

#### **SMART VIEWING**

**Aug 2020 - Nov 2020** 

**♀** London, United Kingdom

#### Research topic:

Remote working on panoramic segmentation which combines semantics segmentation like tangent images with instance segmentation

## R&D Intern in SLAM team (remote work from March) Robotics Institute, Carnegie Mellon University

**Aug 2019 - Jul 2020** 

Pittsburgh, PA, USA

#### Research topics:

- SphereVLAD: Orientation-invariant 3D Place Recognition via Spherical Harmonics in 3D LIDAR-based SLAM algorithm
- SeqSphereVLAD: Sequence Matching Enhanced Orientation-invariant Place Recognition
- Fast Sequence-matching Enhanced orientation-invariant 3D Place Recognition

Adviser: Prof. Howie Choset

#### **Summer Intern Student**

#### Intelligent Space Robotic Lab, Skoltech

H Jun 2019 - Aug 2019

Moscow, Russia

LocoGear: Locomotion Analysis of Robotic Landing Gear for Multicopters

- Prepare reliable and stable hardware for legs and flying systems
- Set up and calibrate the robot
- Perform real-time simulation on a quadruped mobile robot

# Electrical Engineer Team Leader for Eurobot competition Intelligent Space Robotics Lab, Skoltech

m Oct 2018 - Jun 2019

**♀** Moscow, Russia

Development of electronics hardware system of two autonomous mobile robots-2nd place in the World robotic competitions "EurobotOPEN" Finals in France

- Designing a printed circuit board for control Maxon motors, dinamixlels, proximity sensors
- The Robot power supply system
- Communicate with on-board PC via UART interface using STM32

Adviser: Prof. Dzmitry Tsetserukou

## **EDUCATION**

Master's in Information Systems and Technology

GPA: 5 out of 5

Space and Engineering Systems, Skoltech

Bachelor's in Electronics and nanoelectronics

GPA: 5 out of 5

Industrial electronics (Power electronics), Chuvash State University

## **PUBLICATIONS**

- Peng Yin, Fuying Wang, Anton Egorov, Jiafan Hou, Ji Zhang, Howie Choset.
   "SeqSphereVLAD: Sequence Matching Enhanced Orientation-invariant Place Recognition," in Proc. International Conference on Intelligent Robots and Systems (IROS 2020), Las Vegas, NV, USA, 2020, has been accepted for publication.
- Grigoriy A. Yashin, Anton Egorov, Zhanibek Darush, Nikolay Zherdev, and Dzmitry Tsetserukou. "LocoGear: Locomotion Analysis of Robotic Landing Gear for Multicopters," in IEEE Journal on Miniaturization for Air and Space Systems (J-MASS), vol. 1, issue 2, pp.138-147. Accessed: Sep. 2020. [Online]. Available: doi: 10.1109/JMASS.2020.3015525, https://ieeexplore.ieee.org/document/9163320/authors#authors
- Peng Yin, Fuying Wang, Anton Egorov, Ji Zhang. "Fast Sequence-matching Enhanced orientation-invariant 3D Place Recognition," in Proc. IEEE Transactions on Industrial Electronics journal (TIE), 2020, under review.
- Peng Yin, Ziyue Feng, Lingyun Xu,
  Anton Egorov and Bing Li. "PSE-Match: A Viewpoint-free Place Recognition Method with Parallel Semantic Embedding," in Proc. IEEE Transactions on Intelligent Transportation Systems journal (T-ITS), 2020, under review.

## Summer Intern Student in the Institute for Solar Fuels Helmholtz-Zentrum Berlin für Materialien und Energie (HZB)

₩ Jul 2018 - Sep 2018

P Berlin, Germany

#### Research topic:

• Optimizing buried junction cubic  $\pi$ -SnS photocathodes for water splitting (using AA-CVD, Magnetron sputtering, XRD, PEC and SEM analysis)-the goal is to fabricate a solar water splitting device that produces hydrogen

Adviser: Dr. Ibbi Ahmed

## **Electrical Engineer**

#### Relematika

- ♥ Cheboksary, Russia
- Developing analog electronic microprocessor parts for protection of power lines
- Experience in research of the complete cycle of development of analog electronic devices for the electric power engineering industry
- Experience in research and development of output impulse formation circuits of definite duration of output signal for the calibration device and holding tests of the complex protection from arc faults
- Development of a device: « DC control relay» for complex protection of power lines
- Developing of a fiber-optic sensor for detecting a short circuit in substations

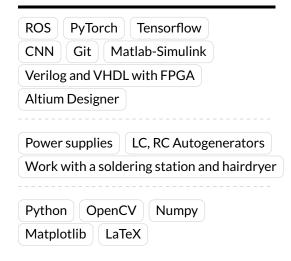
# **Electrical Engineer**

#### **Sirius Educational Center**

# Jun 2017 - Aug 2017

- Sochi, Russia
- Project development using 3D printers and lasers
- Developing of Power Supplies
- Ability to solder SMT PCB components using a microscope or reflow equipment
- Repairing PCBs and building cable assemblies with reliability and ruggedness in mind

## SKILLS



## LANGUAGES

Russian (native) English (C1 level in TOEFL ITP)



## **HONORS & AWARDS**

- Skoltech's academic mobility grant (Russia.2019)
- 2nd place in the world robotic competitions "Eurobot OPEN" Finals (France, 2019) [Online]. Available: https://truestory. skoltech.ru/reset
- Winner of the National stage "Eurobot OPEN" (Russia, 2019)
- Best Design Award in Robotics course (Skoltech, 2019)
- Best Project Award in Control and Systems Engineering course (Skoltech, 2019)
- HZB 2018 Undergraduate Fellowship (Berlin, Germany) [Online]. Available: https://www. helmholtz-berlin.de/jobskarriere/ sommerstudenten/index\_en.html#
- Participant of the 19th World Festival of Youth and Students (Russia, 2018)