Igor Bogoslavskyi

Roboticist, Ph.D.

Address

Munich, Germany

On the Web

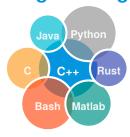GitHub::niosus
LinkedIn::Igor Bogoslavskyi
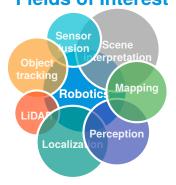
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Programming

Java · Python · C · C++ · Rust · Bash · Matlab

Fields of Interest

Sensor fusion · Scene interpretation · Object tracking · Mapping · Robotics · LiDAR · Perception · Localization

Languages

English ★★★★★
German ★★★★☆
Ukrainian ★★★★★
Russian ★★★★★

Experience

02/19 - Now **Senior Software Engineer for Autonomous Driving**

BMW Group, Munich, Germany

I work on Obstacle Avoidance feature as part of a team. In addition to that, I am Deputy Facilitator of Software Quality community, one of a handfull of people defining standards for C++ within the company, and I wrote the library for error handling mechanism used throughout the BMW Group codebase.

07/17 - 12/17 **Robotics Software Engineer Intern**

Nuro, Mountain View, USA

I worked as part of a small perception team developing the first ever autonomous delivery bot. My work focused on LiDAR scene segmentation, sensor fusion, and sensor calibration. I was fully responsible for all software for cameras and LiDAR calibration.

05/14 - 02/19 **Research Fellow**

University of Bonn, Bonn, Germany

I was the first student at the lab and have set up all the lab infrastructure including a full CI setup. Scientifically I have worked on various topics such as mobile robot navigation, range-based scene interpretation, and mapping. I published at top-tier international conferences such as ICRA and IROS and my code is available as open source.

01/12 - 05/14 **Research Assistant**

AIS lab, University of Freiburg, Freiburg, Germany

As a research assistant in the Autonomous Intelligent Systems lab at the University of Freiburg, led by Prof. Dr. Wolfram Burdard, I dealt with Kinect RGBD sensors mounted onto various platforms. I have implemented traversability analysis for a mobile robot as part of the ROVINA project. The developments in this project led to a publication at ECMR already during my masters.

12/11 - 03/12 **Tutor, Image Processing**

University of Freiburg, Freiburg, Germany

During my first semester I was tutoring the Image Processing course.

03/10 - 10/11 **Junior Software Engineer**

Timecode LLC, Kyiv, Ukraine

Developed casual games for Android and a Web store for ASUS Xtion.

Selected Projects

2016 - Now **EasyClangComplete**

As a hobby project I have written and maintain one of the most used plugins for C/C++ code completion plugins for Sublime Text 3. It has more than 450 stars on GitHub and has been downloaded more than 30000 times.
https://github.com/niosus/EasyClangComplete

2017 - Now **MPR - Multi-Cue Photometric Registration**

I have co-developed MPR — a unified framework for registering data from various 3D sensors through generalized photometric error minimization.
https://gitlab.com/srrg-software/srrg_mpr

2016 - Now **Depth Clustering**

Bonn, Germany

I have developed a robust and efficient algorithm for clustering LiDAR data. The project has more than 400 stars on GitHub and is used both in academia and in companies.
https://github.com/PRBonn/depth_clustering

2012 - 2016 **ROVINA**

Freiburg im Br. and Bonn, Germany

Developing an autonomous robot for underground exploration I was responsible for traversability analysis, navigation, exploration and some of the mapping tasks. The project received excellent reviews from the EU commission.

Video Lectures on C++ on YouTube

I have designed and released a course on Modern C++ for Image Processing. It has more than 45000 views to date and gains popularity in the robotics circles. It is available on **YouTube** and on the website of the IPB lab: `http://www.ipb.uni-bonn.de/teaching/modern-cpp/`.

First-author Publications

A general framework for flexible multi-cue photometric point cloud registration	ICRA 2018
Analyzing the quality of matched 3d point clouds of objects	IROS 2017
Efficient Online Segmentation for Sparse 3D Laser Scans	PFG 2017
Fast range image-based segmentation of sparse 3d laser scans for online operation	IROS 2016
Robust homing for autonomous robots	ICRA 2016
Where to Park? Minimizing the Expected Time to Find a Parking Space	ICRA 2015
Efficient Traversability Analysis for Mobile Robots using the Kinect Sensor	ECMR 2013

Honors & Awards

2013 **MINT Excellence Network Member**   MLP Stiftung
I was chosen as one of 300 best applicants across Germany to the MINT Excellence Network.
The candidates were chosen from the students who work in the fields of Maths, Computer Science, Natural Sciences and Tech across Germany.

2018 **Best PhD Thesis of the Faculty Award**   University of Bonn
My PhD thesis "Robot mapping and navigation in real-world environments" has been awarded the title of the best out of all written at my faculty in 2018.

Education

2014 - 2019 **Ph.D.**   University of Bonn, Germany
I am the first student of Prof. Dr. Cyrill Stachniss and have been at the lab for Photogrammetry and Mobile Robotics since its foundation. My work has resulted in a number of publications on first-tier conferences and in a couple of popular open-source projects. I have graduated with "summa cum laude" and a thesis: "Robot mapping and navigation in real-world environments".

2011 - 2014 **MSc. Applied Computer Science**   University of Freiburg, Germany
Majoring in Robotics, minoring in Computer Vision. My final grade was "excellent". My master thesis title was: "Where to Park? An In-vehicle Parking Space Occupancy Estimation and Guidance System".

2007 - 2011 **BSc. Applied Maths**   Cybernetics, Kyiv National Taras Shevchenko University, Ukraine
I have been studying applied mathematics at the chair of computational methods. My thesis was focusing on implementing a heat distribution process on an Android device.

2004 - 2007 **Higher basic education**   Lyceum 145, Kyiv, Ukraine
I have been studying at one of the best lyceums in Ukraine with a strong emphasis on Maths, Physics and Programming.

January 31, 2020   *Dr. Igor Bogoslavskyi*