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Igor Bogoslavskyi

PhD Candidate

I am a PhD student at the lab for photogrammetry and robotics at the University of Bonn led by Prof. Dr. Cyrill Stachniss. Before moving to Bonn, I have finished my Master of Science studies at the University of Freiburg in Germany in 2011 at the AIS laboratory led by Prof. Dr. Wolfram Burgard, and Bachelor of Science in Applied Maths in Ukraine in 2007. My current interests lie in scene interpretation, perception, mapping and navigation for mobile robots. I am also passionate about code and maintain a couple of open source projects.

Work Experience

2014 — Present, PhD candidate, Photogrammetry lab
Rheinische Friedrich-Wilhelms University Bonn, Germany

- I am now a PhD candidate at the University of Bonn at the Photogrammetry and Robotics lab. My advisor is Prof. Dr. Cyrill Stachniss. For a list of all my publications during this time please see the next page.

2017, Robotics Software Engineering intern
Nuro, Mountain View, USA

- Worked in perception team on an autonomous delivery bot.
- LiDAR scene interpretation, sensor calibration.

2012 — 2014, Research Assistant, AIS lab
Albert Ludwigs University of Freiburg, Germany

- Worked with ASUS Xtion mounted onto various platforms.
- Implemented traversability analysis for a mobile robot as part of ROVINA project.
- Results published at ECMR'13.

2012 — 2013, Research Assistant, HRL lab
Albert Ludwigs University of Freiburg, Germany

- Worked with a Kinect sensor mounted onto the NAO robot.
- Implemented a system that detected human pointing gestures generating a goal for a robot to go to.

2011 — 2012, Tutor, Image Processing course
Albert Ludwigs University of Freiburg, Germany

- Worked as a TA during the first semester of my masters.
- Helped students to accomplish Computer Vision programming assignments.

2010 — 2011, Junior Software Engineer
Timecode LLC, Kyiv, Ukraine

- Android game programming.
- Store for ASUS Xtion written in C#.

I Mostly Code In

- C++
- Python
- Java
- Matlab/Octave

C++ course on YouTube

I have designed and released a course on Modern C++ for Image Processing which is available on YouTube and our website:
`http://www.ipb.uni-bonn.de/teaching/modern-cpp/`.

Honors and Awards

MINT Excellence Network Member
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 Math, Computer Science, Natural Sciences and Tech across Germany.

Fields Of Interest

- LiDAR perception
- Scene interpretation
- Dynamics detection
- Autonomous navigation
- Real-time systems
- Optimization
- SLAM

Languages

- English (IELTS 8.0)
- German (B2+)
- Ukrainian (Native)
- Russian (Native)

References

References are available upon request.

Education

2014 — Current, Friedrich-Wilhelms-Universität Bonn
PhD candidate in photogrammetry and mobile robotics.

2011 — 2014, Albert-Ludwigs-Universität Freiburg
MSc. Applied Computer Science. Final grade: excellent.

2007 — 2011, Kyiv National Taras Shevchenko University
BSc. Faculty of Cybernetics. Applied Math.
Chair of Computational Methods.

2004 — 2007, Lyceum 145, Kyiv, Ukraine
Higher basic education certificate, Mathematics, Physics.

Notable Projects

2012 — 2016, ROVINA
- An autonomous robot for underground exploration.
- Components implemented by me in C++:
  - Traversability analysis for the robot.
  - A robust homing algorithm to return robot home.
  - Most of exploration and navigation stack of the robot.
- Project has received excellent reviews from EU commission
- My papers were accepted to ECMR'13 and ICRA'16

2016 — Current, EasyClangComplete
- A popular plugin for ST3 for C/C++ code completion.
- Code: `https://github.com/niosus/EasyClangComplete`.

2017 — Current, MPR (ICRA 2018)
- MPR — Multi-Cue Photometric Registration, a unified framework for registering data from various 3D sensors.
- Code: `https://gitlab.com/srrg-software/srrg_mpr`

First Author Publications

A general framework for flexible multi-cue photometric point cloud registration
- A general framework for point cloud registration (ICRA 2018).
- Code: `https://gitlab.com/srrg-software/srrg_mpr`.

Efficient Online Segmentation for Sparse 3D Laser Scans
- Velodyne cloud segmentation and ground removal (PFG 2017).
- Also published as: "Fast range image-based segmentation of sparse 3d laser scans for online operation" (IROS 2016).
- Code: `https://github.com/niosus/depth_clustering`.

Robust homing for autonomous robots
- A robust homing approach for an autonomous robot exploring underground environments (ICRA 2016).

Where to Park? Minimizing the Expected Time to Find a Parking Space
- An approach to find a parking spot (ICRA 2015).

Efficient Traversability Analysis for Mobile Robots using the Kinect Sensor
- Fast and reliable traversability method (ECMR 2013).

More publications on my university web page:
`http://www.ipb.uni-bonn.de/people/igor-bogoslavskyi/`