

Aljoša Ošep

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RESEARCH INTERESTS

Computer Vision · Robotics · Machine Learning · Self-supervised Learning From Video and 3D Sensory Data · Multi-Object Tracking · 2D/3D Scene Segmentation · Open-World Perception

EDUCATION

RWTH Aachen University, Aachen, Germany

- Ph.D. in Computer Science Nov 2013 – Jun 2019
 - Thesis: Vision-based Category Agnostic Object Tracking for Mobile Robots and Intelligent Vehicles
 - Supervisor: Prof. Bastian Leibe
 - Final grade: Summa Cum Laude (“with highest distinction”)

University of Bonn, Bonn, Germany

- M.Sc. in Computer Science Sep 2010 – Mar 2013
 - Thesis: Multi-view 3D Reconstruction of Highly-Specular Objects
 - Research focus: Computer Vision, Robotics, Computer Graphics
 - Final grade: 1.3 (scale: 1.0 - excellent, 4.0 - sufficient)

University of Maribor, Maribor, Slovenia

- B.Sc. in Computer Science Sep 2007 – Sep 2010
 - Final grade: 9.59 (scale: 10.0 - excellent, 6.0 - sufficient)

RESEARCH AND TEACHING EXPERIENCE

Technical University of Munich

- Postdoctoral Researcher, Dynamic Vision and Learning Group Aug 2019 – Oct 2022
 - Research focus: multi-object tracking, video object segmentation, LiDAR scene understanding
 - Teaching: *lecturer* for Fundamental Algorithms (WS’19, WS’20), *guest lecturer* for Computer Vision III: Detection, Segmentation and Tracking (WS’19, WS’20)

Carnegie Mellon University

- Visiting Postdoctoral Researcher Jun 2021 – Jun 2022
 - Research focus: trajectory forecasting, open-world segmentation, self-supervised learning

RWTH Aachen University

- Graduate Research Student (Ph.D.), Computer Vision Group Nov 2013 – Jun 2019
 - Supervisor: Prof. Bastian Leibe
 - Research focus: 3D stereo multi-object tracking, open world tracking, video object discovery
 - Teaching: *exercise classes* for Machine Learning (WS’13, SS’16), Computer Vision (WS’14)

University of Bonn

- Undergraduate Research Student, Computer Graphics Group May 2011 – Mar 2013
 - Supervisors: Dr. Michael Weinmann, Prof. Reinhard Klein
 - Focus: 3D reconstruction, image-based material retrieval, physics-based modeling

SELECTED PUBLICATIONS

- Vladimir Fomenko, Ismail Elezi, Deva Ramanan, Laura Leal-Taixé, and Aljoša Ošep. Learning to discover and detect objects. In *Neural Information Processing Systems (NeurIPS)*, 2022
- Patrick Dendorfer, Vladimir Yugay, Aljoša Ošep, and Laura Leal-Taixé. Quo vadis: Is trajectory forecasting the key towards long-term multi-object tracking? In *Neural Information Processing Systems (NeurIPS)*, 2022
- Aleksandr Kim, Guillem Brasó, Aljoša Ošep, and Laura Leal-Taixé. Polarmot: How far can geometric relations take us in 3d multi-object tracking? In *European Conference on Computer Vision (ECCV)*, 2022
- Yang Liu, Idil Esen Zulfikar, Jonathon Luiten, Achal Dave, Deva Ramanan, Bastian Leibe, Aljoša Ošep, and Laura Leal-Taixé. Opening up open-world tracking. In *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022
- Manuel Kolmet, Qunjie Zhou, Aljoša Ošep, and Laura Leal-Taixé. Towards cross-modal pose localization from text-based position descriptions. In *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022

- Mehmet Aygün*, Aljoša Ošep*, Mark Weber, Maxim Maximov, Cyrill Stachniss, Jens Behley, and Laura Leal-Taixé. 4D panoptic LiDAR segmentation. In *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021
- Aljoša Ošep, Wolfgang Mehner, Paul Voigtlaender, and Bastian Leibe. Track, then decide: Category-agnostic vision-based multi-object tracking. In *International Conference on Robotics and Automation (ICRA)*, 2018
- Aljoša Ošep, Wolfgang Mehner, Markus Mathias, and Bastian Leibe. Combined image- and world-space tracking in traffic scenes. In *International Conference on Robotics and Automation (ICRA)*, 2017

SERVICE

- Reviewer for (*machine learning, vision conferences*) CVPR, ECCV, ICCV, BMVC, NeurIPS, ICML, ICLR; (*robotics conferences*) ICRA, IROS, RSS; (*journals*) IJCV, RAL, TPAMI; area chair for WACV'21, ACCV'22
- Workshop organization: *main organizer* of 6th BMTT MOTChallenge Workshop (ICCV'21): Segmenting and Tracking Every Pixel; *co-organizer* of Workshop on Robust Video Scene Understanding: Tracking and Video Segmentation (CVPR'21), 5th BMTT MOTChallenge Workshop: Multi-Object Tracking and Segmentation (CVPR'20), Tracking and its many guises (ECCV'20)
- *Invited speaker* for Workshop on 3D perception in autonomous driving workshop (ECCV'22), Workshop on Multi-Agent Interaction and Relational Reasoning (IROS'2021), Workshop on Behavioral Inference of Remotely Sensed Multi-agent Systems (RSS'21), Workshop on Perception and Control for Autonomous Navigation in Crowded, Dynamic Environments (RSS'21), JackRobbot Dataset and Benchmark Workshop (CVPR'21), Workshop on 3D Object Detection from Images (ICCV'21)
- I am in RSS Pioneers 2021 program committee and the ECCV'24 organization team (poster chair)

HONORS

- National (Slovenian) scholarship for gifted students
- Outstanding reviewer for CVPR'20, ECCV'20, NeurIPS'20, ICML'21, CVPR'21, ICCV'21 (I am one of the three persons listed as outstanding reviewers for all top-tier computer vision conferences in 2020/21, see the informal analysis)
- Recipient of the Borchers Plaque, awarded by RWTH Aachen University for outstanding doctoral dissertations

HOBBIES

Traveling, football, rock climbing

REFERENCES

- **Prof. Deva Ramanan**
Carnegie Mellon University
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- **Prof. Laura Leal-Taixe**
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- **Prof. Bastian Leibe**
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