

Maxim Tatarchenko

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EDUCATION

Albert-Ludwigs-Universität Freiburg

Jan. 2016 — Feb. 2020

PhD (summa cum laude) in Computer Science

Computer Vision Lab, advisor Prof. Dr.-Ing. Thomas Brox

Final grade 0.0, with distinction

Albert-Ludwigs-Universität Freiburg

Oct. 2012 — Mar. 2013

Master in Computer Science

Apr. 2014 — Dec. 2015

Final grade 1.0, with distinction

"MATI" - K. I. Tsiolkovsky Russian State Technological University

Bachelor in Applied Mathematics and Informatics

Oct. 2012 — Mar. 2013

Final grade 4,8, with distinction

PROFESSIONAL EXPERIENCE

Bosch, Renningen, Germany

Nov. 2023 — now

Lead Research Scientist

AI Research Department

Bosch, Renningen, Germany

May. 2020 — Oct. 2023

Research Scientist

AI Research Department

Albert-Ludwigs-Universität Freiburg, Germany

Jan. 2016 — Feb. 2020

Research Assistant

Computer Vision Lab

Intel Labs, Santa Clara, USA

May. 2017 — Nov. 2017

Research Intern

Intelligent Systems Lab, advisor Dr. Vladlen Koltun

Albert-Ludwigs-Universität Freiburg, Germany

Jun. 2014 — Dec. 2015

Student Research Assistant

Autonomous Intelligent Systems Lab

GPSCOM, Moscow, Russia

Dec. 2011 — Apr. 2014

Software Engineer

Crechet corp., Moscow, Russia

Jun. 2011 — Dec. 2011

Software Developer

PUBLICATIONS

Google scholar citations: **4122**.

Not including publications in Russian prior to 2015.

Referred papers

1. B. M. Öcal, M. Tatarchenko, S. Karaoğlu and T. Gevers "SceneTeller: Language-to-3D Scene Generation" In *ECCV*, 2024
2. R. Velastegui, M. Tatarchenko, S. Karaoğlu and T. Gevers "Image semantic segmentation of indoor scenes: A survey" In *CVIU*, 2024
3. J. Kälble, S. Wirges, M. Tatarchenko and E. Ilg "Accurate Training Data for Occupancy Map Prediction in Automated Driving using Evidence Theory" In *CVPR*, 2024
4. M. Tatarchenko, K. Rambach "Histogram-based Deep Learning for Automotive Radar." In *RadarConf*, 2023
5. J. Bechtold, M. Tatarchenko, V. Fischer and T. Brox "Fostering Generalization in Single-view 3D Reconstruction by Learning a Hierarchy of Local and Global Shape Priors." In *CVPR*, 2021
6. S. Mittal, M. Tatarchenko and T. Brox. "Semi-supervised semantic segmentation with high- and low-level consistency." In *TPAMI*, 2019
7. O. Mees, M. Tatarchenko, T. Brox and W. Burgard. "Self-supervised 3d shape and viewpoint estimation from single images." In *IROS*, 2019
8. M. Tatarchenko, S. R. Richter, R. Ranftl, Z. Li, V. Koltun, and T. Brox. "What do single-view 3d reconstruction networks learn?" In *CVPR*, 2019
9. A. Böhm, M. Tatarchenko, and T. Falk. "ISOO^{V2}_DL - semantic instance segmentation of touching and overlapping objects." In *ISBI*, 2019
10. M. Tatarchenko, J. Park, V. Koltun, and Q.-Y. Zhou. "Tangent convolutions for dense prediction in 3d." In *CVPR*, 2018 **(Selected for spotlight oral)**
11. A. Dosovitskiy, J. T. Springenberg, M. Tatarchenko, and T. Brox. "Learning to generate chairs, tables and cars with convolutional networks." *TPAMI*, Apr 2017
12. M. Tatarchenko, A. Dosovitskiy, and T. Brox. "Octree generating networks: Efficient convolutional architectures for high-resolution 3d outputs." In *ICCV*, 2017
13. M. Tatarchenko, A. Dosovitskiy, and T. Brox. "Multi-view 3d models from single images with a convolutional network." In *ECCV*, 2016 **(Selected for spotlight oral)**
14. B. Frank, M. Ruhnke, M. Tatarchenko, and W. Burgard. "3d-reconstruction of indoor environments from human activity." In *ICRA*, 2015

Preprints

1. B. M. Öcal, M. Tatarchenko, S. Karaoğlu and T. Gevers "RealDiff: Real-world 3D Shape Completion using Self-Supervised Diffusion Models" In *arXiv:2409.10180*, 2024
2. S. Mittal, M. Tatarchenko, Özgün Çiçek and T. Brox. "Parting with Illusions about Deep Active Learning." In *arXiv:1912.05361*, 2019

Theses

1. "Scalable 3D deep learning: methods and applications", *PhD thesis*, 2020
2. "Generating unseen views of objects with convolutional networks", *Master's thesis*, 2015

PROFESSIONAL SERVICES

Reviewer for IROS'18, ICCV'18, CVPR'18, CVPR'19 (outstanding reviewer), TPAMI'19, CVPR'20, IJCV'20, CVPR'21 (outstanding reviewer), RA-L'21, TPAMI'21, TPAMI'22, CVPR'23, CVPR'24

AWARDS

VDI-Förderpreis 2016
Sponsorship award of the Association of German Engineers
Awarded for the master's thesis

MEDIA COVERAGE

3sat: Scobel 2016
TV program about AI
Mentioned the work "Multi-view 3D models from single images with CNNs"

PATENTS

Computer-implemented method and system for reconstructing an object captured by an imaging sensor, and training method 2022
DE patent "DE102021202711 A1"
J. Bechtold, T. Brox, V. Fischer and M. Tatarchenko

Tangent convolutions for 3D data 2019
US patent "US2019042883 AA"
J. Park, V. Koltun, M. Tatarchenko and Q.-Y. Zhou

LANGUAGE SKILLS

Russian (mother tongue), **English** (advanced), **German** (advanced)

TEACHING EXPERIENCE

PhD student supervision

Jonas Kälble Apr. 2023 — now
Image-based occupancy estimation
University of Saarland and Bosch

Melis Öcal Sep. 2022 — Mar. 2024
Generative modelling for 3D reconstruction
University of Amsterdam and Bosch Delta Lab 2

Ronny Xavier Velastegui Sandoval Oct. 2022 — Mar. 2024
3D semantic segmentation
University of Amsterdam and Bosch Delta Lab 2

Jan Bechtold*Single-view 3D reconstruction*

University of Freiburg and Bosch

Apr. 2021 — Mar. 2023

Master/bachelor/intern supervision**Yuchen Tao***Point cloud completion via direct measurement integration*

Master intern at BCAI

Oct. 2021 — Apr. 2022

Olesya Tsapenko*Point cloud colorization using sparse convolutions*

Master's thesis

Mar. 2019 — Sep. 2019

Jan Bechtold*3D object detection using tangent convolutions*

Master's thesis

Jun. 2018 — Dec. 2018

Lukas Wiens*Implementierung der Octree Generating Networks Deep Learning Architektur in**Tensorflow*

Bachelor's thesis

Dec. 2017 — Mar. 2018

Sudhanshu Mittal*Semi-supervised learning for real-world object recognition using adversarial autoencoders*

Master's thesis

Mar. 2017 — Nov. 2017

Vladislav Tananaev*Semantic segmentation in point clouds with deep networks*

Master's thesis

Mar. 2017 — Jun. 2017

University courses**Optimization (in German)***Lecture*

Teaching assistant

WS 2019 — 2020

Statistical pattern recognition*Lecture, selected classes*

Lecturer

2018 — 2019

Computer vision*Lecture, selected classes*

Lecturer

2018

Deep learning for biomedical image analysis*Seminar*

Supervisor

2016 — 2019

Current works in computer vision*Seminar*

Supervisor

2016 — 2019

Deep learning <i>Lab course</i> Co-organizer and supervisor	<i>SS 2016</i>
Parking space detection <i>Lab course</i> Co-organizer	<i>SS 2015</i>

SELECTED TALKS

Not including internal company/lab talks, not including talks prior to 2016.

3D deep learning: methods and applications <i>PhD defence, Freiburg, Germany</i>	<i>Jul. 2020</i>
3D deep learning: methods and applications <i>5th Christmas Colloquium on Computer Vision, Yandex, Moscow</i>	<i>Dec. 2019</i>
What do single-view 3d reconstruction networks learn? <i>Dynamic Vision workshop, CVPR, Long Beach</i>	<i>Jul. 2019</i>
Problems of single-image 3d reconstruction <i>Intel Network on Intelligent Systems Workshop, Munich</i>	<i>Sep. 2018</i>
Deep learning in computer vision and its applications to 3D data <i>Optics Colloquium, University of Freiburg</i>	<i>Jun. 2018</i>
Multi-view 3D models from single images with a convolutional network <i>2nd Christmas Colloquium on Computer Vision, Skoltech, Moscow</i>	<i>Dec. 2016</i>
Multi-view 3D models from single images with a convolutional network <i>ECCV, Amsterdam</i>	<i>Oct. 2016</i>
Graduation speech <i>Graduation ceremony, University of Freiburg</i>	<i>Jul. 2016</i>

VOLUNTEERING ACTIVITIES

Robotics workshop for Ukrainian kids <i>Organizer</i>	<i>May. 2022 — now</i>
Youth hackathon Freiburg <i>Mentor</i>	<i>Nov. 2019</i>