

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 0.0, 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: **2650**.

Not including publications in Russian prior to 2015.

Referred papers

1. 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
2. M. Tatarchenko, K. Rambach "Histogram-based Deep Learning for Automotive Radar." In *RadarConf*, 2023
3. 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
4. S. Mittal, M. Tatarchenko and T. Brox. "Semi-supervised semantic segmentation with high- and low-level consistency." In *TPAMI*, 2019
5. O. Mees, M. Tatarchenko, T. Brox and W. Burgard. "Self-supervised 3d shape and viewpoint estimation from single images." In *IROS*, 2019
6. 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
7. A. Böhm, M. Tatarchenko, and T. Falk. "ISOO^{V2}_DL - semantic instance segmentation of touching and overlapping objects." In *ISBI*, 2019
8. M. Tatarchenko, J. Park, V. Koltun, and Q.-Y. Zhou. "Tangent convolutions for dense prediction in 3d." In *CVPR*, 2018 **(Selected for spotlight oral)**
9. A. Dosovitskiy, J. T. Springenberg, M. Tatarchenko, and T. Brox. "Learning to generate chairs, tables and cars with convolutional networks." *TPAMI*, Apr 2017
10. M. Tatarchenko, A. Dosovitskiy, and T. Brox. "Octree generating networks: Efficient convolutional architectures for high-resolution 3d outputs." In *ICCV*, 2017
11. 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)**
12. B. Frank, M. Ruhnke, M. Tatarchenko, and W. Burgard. "3d-reconstruction of indoor environments from human activity." In *ICRA*, 2015

Preprints

1. 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 — now

Generative modelling for 3D reconstruction
University of Amsterdam and Bosch Delta Lab 2

Ronny Xavier Velastegui Sandoval

Oct. 2022 — now

3D semantic segmentation
University of Amsterdam and Bosch Delta Lab 2

Jan Bechtold

Apr. 2021 — Mar. 2023

Single-view 3D reconstruction
University of Freiburg and Bosch

Master/bachelor/intern supervision

Yuchen Tao

Oct. 2021 — Apr. 2022

Point cloud completion via direct measurement integration

Master intern at BCAI

Olesya Tsapenko

Mar. 2019 — Sep. 2019

Point cloud colorization using sparse convolutions

Master's thesis

Jan Bechtold

Jun. 2018 — Dec. 2018

3D object detection using tangent convolutions

Master's thesis

Lukas Wiens

Dec. 2017 — Mar. 2018

Implementierung der Octree Generating Networks Deep Learning Architektur in Tensorflow

Bachelor's thesis

Sudhanshu Mittal

Mar. 2017 — Nov. 2017

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

Master's thesis

Vladislav Tananaev

Mar. 2017 — Jun. 2017

Semantic segmentation in point clouds with deep networks

Master's thesis

University courses

Optimization (in German)

WS 2019 — 2020

Lecture

Teaching assistant

Statistical pattern recognition

2018 — 2019

Lecture, selected classes

Lecturer

Computer vision

2018

Lecture, selected classes

Lecturer

Deep learning for biomedical image analysis

2016 — 2019

Seminar

Supervisor

Current works in computer vision

2016 — 2019

Seminar

Supervisor

Deep learning

SS 2016

Lab course

Co-organizer and supervisor

Parking space detection

SS 2015

Lab course

Co-organizer

SELECTED TALKS

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

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| 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

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