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

LOCO School, Berlin, Germany *May. 2022 — now*
Founder
Nonprofit robotics school for kids and teenagers

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: **4514**. H-Index: **11**.

Not including publications in Russian prior to 2015.

Referred papers

1. S. Mittal, J. Niemeijer, Ö. Çiçek, M. Tatarchenko, J. Ehrhardt, J. P. Schäfer, H. Handels, T. Brox "Realistic Evaluation of Deep Active Learning for Image Classification and Semantic Segmentation" In *IJCV*, 2025

2. J. Kälble, S. Wirges, M. Tatarchenko and E. Ilg "EvOcc: Accurate Semantic Occupancy for Automated Driving Using Evidence Theory" In *CVPR*, 2025

3. B. M. Öcal, M. Tatarchenko, S. Karaoğlu and T. Gevers "SceneTeller: Language-to-3D Scene Generation" In *ECCV*, 2024

4. R. Velastegui, M. Tatarchenko, S. Karaoğlu and T. Gevers "Image Semantic Segmentation of Indoor Scenes: A Survey" In *CVIU*, 2024

5. 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

6. M. Tatarchenko, K. Rambach "Histogram-based Deep Learning for Automotive Radar." In *RadarConf*, 2023

7. 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

8. S. Mittal, M. Tatarchenko and T. Brox. "Semi-supervised semantic segmentation with high- and low-level consistency." In *TPAMI*, 2019

9. O. Mees, M. Tatarchenko, T. Brox and W. Burgard. "Self-supervised 3d shape and viewpoint estimation from single images." In *IROS*, 2019

10. 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

11. A. Böhm, M. Tatarchenko, and T. Falk. "ISOO^V2_DL - semantic instance segmentation of touching and overlapping objects." In *ISBI*, 2019

12. M. Tatarchenko*, J. Park*, V. Koltun, and Q.-Y. Zhou. "Tangent convolutions for dense prediction in 3d." In *CVPR*, 2018 **(Selected for spotlight oral)**

13. A. Dosovitskiy, J. T. Springenberg, M. Tatarchenko, and T. Brox. "Learning to generate chairs, tables and cars with convolutional networks." *TPAMI*, Apr 2017

14. M. Tatarchenko, A. Dosovitskiy, and T. Brox. "Octree generating networks: Efficient convolutional architectures for high-resolution 3d outputs." In *ICCV*, 2017

15. 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)**

16. 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, Ö. 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, NeurIPS'25

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

Training method, method and system for generating synthetic measurement data *2025*
DE patent app. "DE202410201465"
M. Tatarchenko, M. Schreiber and J. Vertens

Device and method for generating training data for an object detector *2025*
US patent app. "US19049260"
M. Schreiber, J. Vertens and M. Tatarchenko

Method and system for sensing an environment of a device using sparse spectra *2025*
US patent app. "US19032764"
K. Rambach, D. K. Jenet, M. Quach, M. Tatarchenko, O. Kern, S. Braun and Y. Feldman

Device and method for training a model for determining a shape of an object, method for operating a computer controlled machine depending on a shape of an object *2025*
US patent app. "US18917575"
M. Tatarchenko, M. Öcal, S. Karaoglu, T. Gevers

Processing of measurement data available as point clouds with better generalization across the training data *2024*
US patent app. "US18543876"
K. Rambach, D. Stöckel, M. Tatarchenko

Method for compressing sensor data of at least one sensor of a vehicle *2024*
WO patent app. "WO2023EP82406"
M. Tatarchenko, K. Rambach

Computer-implemented method and system for reconstructing an object captured by an imaging sensor, and training method *2022*
DE patent app. "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 *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

School courses

Introduction to Arduino robotics *2022 — 2024*
Practical course
Organizer

Advanced Arduino robotics in C *2024 — 2025*
Practical course
Organizer

SELECTED TALKS

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

3D deep learning: methods and applications *Jul. 2020*
PhD defence, Freiburg, Germany

3D deep learning: methods and applications *Dec. 2019*
5th Christmas Colloquium on Computer Vision, Yandex, Moscow

What do single-view 3d reconstruction networks learn? *Jul. 2019*
Dynamic Vision workshop, CVPR, Long Beach

Problems of single-image 3d reconstruction *Sep. 2018*
Intel Network on Intelligent Systems Workshop, Munich

Deep learning in computer vision and its applications to 3D data *Jun. 2018*
Optics Colloquium, University of Freiburg

Multi-view 3D models from single images with a convolutional network
2nd Christmas Colloquium on Computer Vision, Skoltech, Moscow *Dec. 2016*

Multi-view 3D models from single images with a convolutional network
ECCV, Amsterdam *Oct. 2016*

Graduation speech *Jul. 2016*
Graduation ceremony, University of Freiburg

VOLUNTEERING ACTIVITIES

PANDA Platforma Berlin *Jun. 2022 — now*
Technical Director

Youth hackathon Freiburg *Nov. 2019*
Mentor