

# Michael Niemeyer

✉ micniemeyer1@gmail.com | 🏠 <https://m-niemeyer.github.io> | 📍 Cologne, Germany

## Education

### Max Planck Institute for Intelligent Systems

PhD (summa cum laude) in Computer Science supervised by Prof. Dr. A. Geiger

*Tübingen, Germany*

2018 - 2022

### University of St. Andrews

MSc (top of class, 1.0 / 1.0) in Computer Science supervised by Prof. Dr. O. Arandjelović

*St Andrews, UK*

2016 - 2017

### University of Cologne

BSc (distinction, 1.8 / 1.0) in Mathematics supervised by Prof. Dr. A. Lytchak

*Cologne, Germany*

2012 - 2015

## Employment

### Google

Research Scientist

*Cologne, Germany*

2022 - now

### Google

Research Scientist Intern and Student Researcher

*Berlin, Germany*

Summer 2021 - Winter 2021

### University of Tübingen

Ph.D. Student and Academic Assistant

*Tübingen, Germany*

2018 - 2022

### Sentia Pty Ltd

Front-End Developer

*Sydney, Australia*

Summer 2017 - Winter 2017

### ecoprogram GmbH

Student Researcher

*Cologne, Germany*

2015 - 2016

### St.-Antonius Hospital

IT Intern

*Kleve, Germany*

Summer 2011, Summer 2013

## Awards and Honors

2023	<b>CVPR Outstanding Reviewer Award</b> for reviewing efforts
2022	<b>CVPR Outstanding Reviewer Award</b> for reviewing efforts
2021	<b>CVPR Best Paper Award</b> for our GIRAFFE project
2021	<b>AiGameDev Scientific Paper Award</b> for our GRAF project
2021	<b>CVPR Outstanding Reviewer Award</b> for reviewing efforts
2020	<b>Among 15 Most Influential ECCV-20 Papers</b> for our ConvOnet project
2020	<b>Among 15 Most Influential CVPR-20 Papers</b> for our DVR project
2019	<b>CS Teaching Award</b> for our computer vision lecture
2019	<b>Among 15 Most Influential CVPR-19 Papers</b> for our ONet project
2017	<b>Dean's List Award for Academic Excellence</b> for graduating top of class
2011	<b>e-fellows scholarship</b> for grading as top of class
2011	<b>German Mathematics Society scholarship</b> for grading as top of class
2011	<b>German Physics Society scholarship</b> for grading as top of class

## Academic Services

2022	<b>Lead Teaching Assistant</b> for the Computer Vision Lecture
2021	<b>Teaching Assistant</b> for the Computer Vision Lecture
2021	<b>MSc Thesis Supervisor</b> for Holger Heidrich (with Distinction)
2019	<b>Teaching Assistant</b> for the Machine Learning in Graphics and Vision Lecture
2018 - now	<b>Reviewer</b> for CVPR, ECCV, ICCV, NeurIPS, SIGGRAPH, SIGGRAPH Asia, ICLR, 3DV, AAAI, PAMI

## Technical Skills

**Languages** German (native), English (C1/C2), Spanish (basic skills)

**Programming** Python, Numpy, PyTorch, JAX, OpenCV

# Publications

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- Francis Engelmann, Fabian Manhardt, **Michael Niemeyer**, Keisuke Tateno, Marc Pollefeys, Federico Tombari: Open-Set 3D Scene Segmentation with Rendered Novel Views. *arXiv.org*, 2023.
- Hidenobu Matsuki, Keisuke Tateno, **Michael Niemeyer**, Federic Tombari: NEWTON: Neural View-Centric Mapping for On-the-Fly Large-Scale SLAM. *arXiv.org*, 2023.
- Amit Raj, Srinivas Kaza, Ben Poole, **Michael Niemeyer**, Nataniel Ruiz, Ben Mildenhall, Shiran Zada, Kfir Aberman, Michael Rubinstein, Jonathan Barron, Yuanzhen Li, Varun Jampani: DreamBooth3D: Subject-Driven Text-to-3D Generation. *Proc. of the IEEE International Conf. on Computer Vision (ICCV)*, 2023.
- Christina Tsalicoglou, Fabian Manhardt, Alessio Tonioni, **Michael Niemeyer**, Federico Tombari. NeRFMeshing: TextMesh: Generation of Realistic 3D Meshes From Text Prompts. *Proc. of the International Conf. on 3D Vision (3DV)*, 2023.
- Marie-Julie Rakotosaona, Fabian Manhardt, Diego Martin Arroyo, **Michael Niemeyer**, Abhijit Kundu, Federico Tombari. NeRFMeshing: Distilling Neural Radiance Fields into Geometrically-Accurate 3D Meshes. *Proc. of the International Conf. on 3D Vision (3DV)*, 2023.
- Zehao Yu, Anpei Chen, Bozidar Antic, Songyou Peng, Apratim Bhattacharyya, **Michael Niemeyer**, Siyu Tang, Torsten Sattler, Andreas Geiger. SDFStudio: A Unified Framework for Surface Reconstruction. *Open-Source Project*, 2022.
- Zehao Yu, Songyou Peng, **Michael Niemeyer**, Torsten Sattler, Andreas Geiger. MonoSDF: Exploring Monocular Geometric Cues for Neural Implicit Surface Reconstruction. *Advances in Neural Information Processing Systems (NeurIPS)*, 2022.
- Katja Schwarz, Axel Sauer, **Michael Niemeyer**, Yiyi Liao, Andreas Geiger. VoxGRAF: Fast 3D-Aware Image Synthesis with Sparse Voxel Grids. *Advances in Neural Information Processing Systems (NeurIPS)*, 2022.
- **Michael Niemeyer**, Jonathan T. Barron, Ben Mildenhall, Mehdi S. M. Sajjadi, Andreas Geiger, Noha Radwan. RegNeRF: Regularizing Neural Radiance Fields for View Synthesis from Sparse Inputs. *Proc. IEEE Conf. on Computer Vision, Pattern Recognition (CVPR)*, 2022. **Oral Presentation.**
- **Michael Niemeyer**, Andreas Geiger. CAMPARI: Camera-Aware Decomposed Generative Neural Radiance Fields. *Proc. of the International Conf. on 3D Vision (3DV)*, 2021.
- Songyou Peng, Chiyu Jiang, Yiyi Liao, **Michael Niemeyer**, Marc Pollefeys, Andreas Geiger. Shape As Points: A Differentiable Poisson Solver. *Advances in Neural Information Processing Systems (NeurIPS)*, 2021. **Oral Presentation.**
- **Michael Niemeyer**, Andreas Geiger. Giraffe: Representing scenes as compositional generative neural feature fields. *Proc. IEEE Conf. on Computer Vision, Pattern Recognition (CVPR)*, 2021. **Oral Presentation, Best Paper Award.**
- Michael Oechsle, **Michael Niemeyer**, Christian Reiser, Lars Mescheder, Thilo Strauss, Andreas Geiger. Learning Implicit Surface Light Fields. *Proc. of the International Conf. on 3D Vision (3DV)*, 2020.
- Katja Schwarz, Yiyi Liao, **Michael Niemeyer**, Andreas Geiger. GRAF: Generative Radiance Fields for 3D-Aware Image Synthesis. *Advances in Neural Information Processing Systems (NeurIPS)*, 2020.
- Songyou Peng, **Michael Niemeyer**, Lars Mescheder, Marc Pollefeys, Andreas Geiger. Convolutional Occupancy Networks. *Proc. of the European Conf. on Computer Vision (ECCV)*, 2020. **Spotlight Presentation.**
- **Michael Niemeyer**, Lars Mescheder, Michael Oechsle, Andreas Geiger. Differentiable volumetric rendering: learning implicit 3d representations without 3d supervision. *Proc. IEEE Conf. on Computer Vision, Pattern Recognition (CVPR)*, 2020.
- **Michael Niemeyer**, Lars Mescheder, Michael Oechsle, Andreas Geiger. Occupancy flow: 4d reconstruction by learning particle dynamics. *Proc. of the IEEE International Conf. on Computer Vision (ICCV)*, 2019.
- Michael Oechsle, Lars Mescheder, **Michael Niemeyer**, Thilo Strauss, Andreas Geiger. Texture fields: Learning texture representations in function space. *Proc. of the IEEE International Conf. on Computer Vision (ICCV)*, 2019. **Oral Presentation.**
- Lars Mescheder, Michael Oechsle, **Michael Niemeyer**, Sebastian Nowozin, Andreas Geiger. Occupancy networks: Learning 3d reconstruction in function space. *Proc. IEEE Conf. on Computer Vision, Pattern Recognition (CVPR)*, 2019. **Oral Presentation, Best Paper Finalist.**
- **Michael Niemeyer**, Ognjen Arandjelović. Automatic Semantic Labelling of Images by Their Content Using Non-Parametric Bayesian Machine Learning, Image Search Using Synthetically Generated Image Collages. *Proc. IEEE Conf. on Data Science, Advanced Analytics (DSAA)*, 2018.

## Talks

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- Neural Scene Representations and Differentiable Rendering. *Delft University of Technology*, 2022.
- Implicit Neural Scene Representations and 3D-Aware Generative Modelling. *GAMES Webinar Series*, 2022.
- Generative Neural Scene Representations. *Adobe Research*, 2021.
- Implicit Scene Representations and Neural Rendering. *Technical University Munich - AI Lecture Series*, 2021.
- Generative Neural Scene Representations for 3D-Aware Image Synthesis. *ETH AIT*, 2021.
- Generative Neural Scene Representations for 3D-Aware Image Synthesis. *Amazon Research*, 2021.
- Generative Neural Scene Representations for 3D-Aware Image Synthesis. *Massachusetts Institute of Technology*, 2021.
- KI Forschung und 3D Deep Learning. *Fraunhofer IAO event 100 KI Talents*, 2020.
- 3D Deep Learning in Function Space. *NVIDIA GPU Technology Conference (GTC)*, 2020.