Michael Niemeyer

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Education

Max Planck Institute for Intelligent Systems — *Tübingen, Germany*
PhD (summa cum laude) in Computer Science supervised by Prof. Dr. A. Geiger — 2018 - 2022

University of St. Andrews — *St Andrews, UK*
MSc (top of class, 1.0 / 1.0) in Computer Science supervised by Prof. Dr. O. Arandjelović — 2016 - 2017

University of Cologne — *Cologne, Germany*
BSc (distinction, 1.8 / 1.0) in Mathematics supervised by Prof. Dr. A. Lytchak — 2012 - 2015

Employment

Google — *Zurich, Switzerland*
Senior Research Scientist — 2024 - now
Research Scientist — 2022 - 2024
Research Scientist Intern and Student Researcher — Summer 2021 - Winter 2021

University of Tübingen — *Tübingen, Germany*
Ph.D. Student and Academic Assistant — 2018 - 2022

Sentia Pty Ltd — *Sydney, Australia*
Front-End Developer — Summer 2017 - Winter 2017

Awards and Honors

2024	**Schickard Thesis Award** for top summa cum laude PhD thesis
2024	**Südwestmetall Förderpreis Thesis Award** for outstanding PhD thesis
2023	**CVPR Outstanding Reviewer Award** for reviewing efforts
2022	**CVPR Outstanding Reviewer Award** for reviewing efforts
2021	**CVPR Best Paper Award** for our GIRAFFE project
2021	**AiGameDev Scientific Paper Award** for our GRAF project
2021	**CVPR Outstanding Reviewer Award** for reviewing efforts
2020	**Among 15 Most Influencial ECCV-20 Papers** for our ConvOnet project
2020	**Among 15 Most Influencial CVPR-20 Papers** for our DVR project
2019	**CS Teaching Award** for our computer vision lecture
2019	**Among 15 Most Influencial CVPR-19 Papers** for our ONet project
2017	**Dean's List MSc Award for Academic Excellence** for graduating top of class
2011	**e-fellows scholarship** for grading as top of class
2011	**German Mathematics Society scholarship** for grading as top of class
2011	**German Physics Society scholarship** for grading as top of class

Academic Services

2025	**Area Chair** for CVPR
2024	**Area Chair** for ECCV
2022	**Lead Teaching Assistant** for the Computer Vision Lecture
2021	**Teaching Assistant** for the Computer Vision Lecture
2021 - now	**Supervisor** for BSc, MSc, and PhD theses as well as research internships)
2019	**Teaching Assistant** for the Machine Learning in Graphics and Vision Lecture
2018 - now	**Reviewer** for CVPR, ECCV, ICCV, NeurIPS, SIGGRAPH, SIGGRAPH Asia, ICLR, 3DV, AAAI, PAMI

Student Supervision

- Yiming Wang, PhD Internship (Google). Fast Dynamic 3D Gaussian Splatting. 2024 - now.
- Maria Parelli, PhD Thesis (Uni. Tue.). 3D Scene Editing. 2024 - now.
- Casimir Feldmann, Semester Project (ETH). Large-Scale SLAM. 2024 - now.
- Tommaso Di Mario, Semester Project (ETH). Fast Text-to-3D. 2024 - now.
- Sgobbi Andrea, Semester Project (ETH). Fast Text-to-3D. 2024 - now.
- Xin Kong, PhD Internship (Google). Diffusion-based Multi-view Image Generation. 2024 - now.
- Siyun Liang, Master Thesis (TUM). Language-based Scene Understanding. 2024 - now.
- Tianyi Zhang, Master Thesis (ETH). Sparse View Synthesis. 2024 - now.
- Tianshi Cao, PhD Internship (Google). Diffusion-based Generative Modeling. 2024.
- Thomas Wimmer. Master Thesis (TUM). 4D Scene Animation. 2024.
- Shengyu Huang, PhD Internship (Google). Sparse View Synthesis with Diffusion Priors. 2024.
- Erik Sandström, PhD Internship (Google). Splat-SLAM: Globally Optimized RGB-only SLAM with 3D Gaussians. 2024.
- Christina Tsalicoglou, PhD Internship (Google). InseRF: Textmesh: Generation of realistic 3d meshes from text prompts. 2023.
- Hidenobu Matsuki, PhD Internship (Google). Newton: Neural view-centric mapping for on-the-fly large-scale slam. 2023.
- Mohamad Shahbazi, PhD Internship (Google). InseRF: Text-Driven Generative Object Insertion in Neural 3D Scenes. 2023.
- Fangjinhua Wang, PhD Internship (Google). Unifying Neural Representations for 3D Reconstruction of Scenes with Reflections. 2023.
- Kunyi Li, PhD Thesis (TUM). Semanic-Informed Simultaneous localization and mapping. 2023 - now.
- Holger Heidrich, Master Thesis (Uni. Tue). Differentiable Volumetric Rendering of Scene Understanding. 2021.

Publications

- Fangneng Zhan, Hanxue Liang, Yifan Wang, **Michael Niemeyer**, Michael Oechsle, Adam Kortylewski, Cengiz Oztireli, Gordon Wetzstein, Christian Theobalt. Evolutive Rendering Models. *arXiv.org*, 2024.
- Erik Sandström, Keisuke Tateno, Michael Oechsle, **Michael Niemeyer**, Luc Van Gool, Martin R Oswald, Federico Tombari. Splat-SLAM: Globally Optimized RGB-only SLAM with 3D Gaussians. *arXiv.org*, 2024.
- **Michael Niemeyer**, Fabian Manhardt, Marie-Julie Rakotosaona, Michael Oechsle, Daniel Duckworth, Rama Gosula, Keisuke Tateno, John Bates, Dominik Kaeser, and Federico Tombari. RadSplat: Radiance Field-Informed Gaussian Splatting for Robust Real-Time Rendering with 900+ FPS. *arXiv.org*, 2024.
- Kunyi Li, **Michael Niemeyer**, Nassir Navab, Federico Tombari: DNS SLAM: Dense Neural Semantic-Informed SLAM. *IROS*, 2024. **Oral Presentation.**
- Yunus, Raza, Jan Eric Lenssen, **Michael Niemeyer**, Yiyi Liao, Christian Rupprecht, Christian Theobalt, Gerard Pons-Moll, Jia-Bin Huang, Vladislav Golyanik, and Eddy Ilg. Recent Trends in 3D Reconstruction of General Non-Rigid Scenes. *Computer Graphics Forum*, 2024.
- Francis Engelmann, Fabian Manhardt, **Michael Niemeyer**, Keisuke Tateno, Marc Pollefeys, Federico Tombari: OpenNeRF: Open Set 3D Neural Scene Segmentation with Pixel-Wise Features and Rendered Novel Views. *ICLR*, 2024.
- Hidenobu Matsuki, Keisuke Tateno, **Michael Niemeyer**, Federic Tombari: NEWTON: Neural View-Centric Mapping for On-the-Fly Large-Scale SLAM. *Robotics and Automation Letters (RA-L)*, 2024.
- Mohamad Shahbazi, Liesbeth Claessens, **Michael Niemeyer**, Edo Collins, Alessio Tonioni, Luc Van Gool, and Federico Tombari. InseRF: Text-Driven Generative Object Insertion in Neural 3D Scenes. *arXi.org*, 2024.
- Fangjinhua Wang, Marie-Julie Rakotosaona, **Michael Niemeyer**, Richard Szeliski, Marc Pollefeys, Federico Tombari: UniSDF: Unifying Neural Representations for High-Fidelity 3D Reconstruction of Complex Scenes with Reflections. *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

- Neural Representations for Real-time View Synthesis, 3D Asset Generation, and Beyond. *NITRE CVPR Workshop*, 2024.
- RadSplat: Radiance Field-Informed Gaussian Splatting for Robust Real-Time Rendering with 900+ FPS *ETH ASL Group Visit*, 2024.
- RadSplat: Radiance Field-Informed Gaussian Splatting for Robust Real-Time Rendering with 900+ FPS *ETH CVG Group Visit*, 2024.
- Neural Representations for 3D Asset Reconstruction, Generation, and Beyond. *Electronic Arts Research*, 2024.
- Neural Representations for 3D Asset Reconstruction, Generation, and Beyond. *University of Massachusetts Amherst*, 2024.
- 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. *Frauenhofer IAO event 100 KI Talents*, 2020.
- 3D Deep Learning in Function Space. *NVIDIA GPU Technology Conference (GTC)*, 2020.