Michael Niemeyer

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Education

Max Planck Institute for Intelligent Systems *Tübingen, Germany*
PhD in Computer Science - focus on Machine Learning and Computer Vision 2018 - 2022

University of St. Andrews *St Andrews, UK*
MSc (distinction, top of class, 1.0 / 1.0) in Advanced Computer Science - focus on Machine Learning 2016 - 2017

University of Cologne *Cologne, Germany*
BSc (distinction, 1.8 / 1.0) in Mathematics - focus on Topology 2012 - 2015

Employment

Google *Cologne, Germany*
Research Scientist 2022 - now

Google *Berlin, Germany*
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

ecoprog GmbH *Cologne, Germany*
Student Researcher 2015 - 2016

St.-Antonius Hospital *Kleve, Germany*
IT Intern Summer 2011, Summer 2013

Awards and Honors

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 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 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

Services

2022 **Lead Teaching Assistant** for the Computer Vision Lecture
2021 **Teaching Assistant** for the Computer Vision Lecture
2021 **MSc Thesis Supervisor** for Holger Heidrich (with Distinction)
2019 **Teaching Assistant** for the Machine Learning in Graphics and Vision Lecture
2018 - 2022 **Reviewer** for CVPR, ECCV, ICCV, NeurIPS, SIGGRAPH, SIGGRAPH Asia, AAAI, PAMI, GCPR

Technical Skills

Languages German (native), English (C1/C2), Spanish (basic skills)
Programming Python, Numpy, PyTorch, JAX, OpenCV
Software Git, Latex, Inkscape, Gimp, Office Suite

Publications

- Zehao Yu and Songyou Peng and **Michael Niemeyer** and Torsten Sattler and Andreas Geiger. MonoSDF: Exploring Monocular Geometric Cues for Neural Implicit Surface Reconstruction. *Advances in Neural Information Processing Systems (NeurIPS)*, 2022.
- Katja Schwarz and Axel Sauer and **Michael Niemeyer** and Yiyi Liao and Andreas Geiger. VoxGRAF: Fast 3D-Aware Image Synthesis with Sparse Voxel Grids. *Advances in Neural Information Processing Systems (NeurIPS)*, 2022.
- **Michael Niemeyer** and Jonathan T. Barron and Ben Mildenhall and Mehdi S. M. Sajjadi and Andreas Geiger and Noha Radwan. RegNeRF: Regularizing Neural Radiance Fields for View Synthesis from Sparse Inputs. *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2022. **Oral Presentation.**
- **Michael Niemeyer**, and 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, and Andreas Geiger. Shape As Points: A Differentiable Poisson Solver. *Advances in Neural Information Processing Systems (NeurIPS)*, 2021. **Oral Presentation.**
- **Michael Niemeyer**, and Andreas Geiger. Giraffe: Representing scenes as compositional generative neural feature fields. *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2021. **Oral Presentation, Best Paper Award.**
- Michael Oechsle, **Michael Niemeyer**, Christian Reiser, Lars Mescheder, Thilo Strauss, and Andreas Geiger. Learning Implicit Surface Light Fields. *Proc. of the International Conf. on 3D Vision (3DV)*, 2020.
- Katja Schwarz, Yiyi Liao, **Michael Niemeyer**, and 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, and Andreas Geiger. Convolutional Occupancy Networks. *Proc. of the European Conf. on Computer Vision (ECCV)*, 2020. **Spotlight Presentation.**
- **Michael Niemeyer**, Lars Mescheder, Michael Oechsle, and Andreas Geiger. Differentiable volumetric rendering: learning implicit 3d representations without 3d supervision. *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2020.
- **Michael Niemeyer**, Lars Mescheder, Michael Oechsle, and 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, and 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, and Andreas Geiger. Occupancy networks: Learning 3d reconstruction in function space. *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2019. **Oral Presentation, Best Paper Finalist.**
- **Michael Niemeyer**, and Ognjen Arandjelović. Automatic Semantic Labelling of Images by Their Content Using Non-Parametric Bayesian Machine Learning and Image Search Using Synthetically Generated Image Collages. *Proc. IEEE Conf. on Data Science and Advanced Analytics (DSAA)*, 2018.

Talks

- 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.