

# Manuel Dahnert

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## EXPERIENCE

- 5/2025 – **Machine Learning Engineer** NavVis GmbH  
Enabling Spatial Intelligence in large-scale SLAM-based 3D Capturing.
- 9/2018 – 3/2025 **Ph.D Candidate** Technische Universität München (TUM)  
Researching Holistic 3D Scene Understanding under the supervision of Prof. Matthias Nießner.
- 6/2018 – 8/2018 **Research Intern** Technische Universität München (TUM)  
Research Internship at the Visual Computing Group about the topic of analyzing geometric similarities between 3D meshes using Deep Learning methods.
- 4/2017 – 7/2017 **Research Assistant** Technische Universität München (TUM)  
Research assistant for a follow-up project to my Bachelor's thesis in which the developed visualization method was compared to other state-of-the-art methods in a quantitative user study.
- 6/2014 – 2/2016 **Software Developer (Working Student)** CCV Deutschland GmbH  
Software developer for embedded payment solutions in a cross platform environment with C++.

## EDUCATION

- 2018 – 2024 *expected* **Technische Universität München (TUM)** Munich, Germany  
**Ph.D. Student** Ph.D. in Visual Computing with focus on data-driven methods for Scene Understanding, Shape Generation, and Diffusion Models under the supervision of Prof. Matthias Nießner.
- 2019 **Stanford University** Stanford, California, United States  
**Research Visit** Research Visit from April until June 2019 in the Geometric Computation Group of Prof. Leonidas Guibas as part of his TUM-IAS Hans Fischer Senior fellowship.
- 2015 – 2018 **Technische Universität München (TUM)** Munich, Germany  
**M.Sc.** M.Sc. in Informatics: Games Engineering with specialization in Computer Graphics and Animation, and Hardware-aware Programming. Thesis "*Transfer Learning between Synthetic and Real Data*".
- 2016 – 2017 **Chalmers University of Technology** Göteborg, Sweden  
**Exchange** Exchange student of the Erasmus+ Mobility Program with selected courses in Advanced Computer Graphics, Game Engine Architecture and Mobile Computing.
- 2012 – 2015 **Technische Universität München (TUM)** Munich, Germany  
**B.Sc.** B.Sc. in Informatics: Games Engineering. Thesis "*Glyph-based Visualization of Uncertain Scientific Data*".

## PUBLICATIONS

- NeurIPS 2024** **Manuel Dahnert**, Angela Dai, Norman Müller Matthias Nießner:  
*Coherent 3D Scene Diffusion From a Single RGB Image.*
- NeurIPS 2021** **Manuel Dahnert**, Ji Hou, Matthias Nießner, Angela Dai:  
*Panoptic 3D Scene Reconstruction from a Single RGB Image.*
- ICCV 2019** **Manuel Dahnert**, Angela Dai, Leonidas Guibas, Matthias Nießner:  
*Joint Embedding of 3D Scan and CAD Objects.*
- CVPR 2019** Armen Avetisyan, **Manuel Dahnert**, Angela Dai, Angel X. Chang, Manolis Savva, Matthias Nießner:  
*Scan2CAD: Learning CAD Model Alignment in RGB-D Scans. (Oral).*
- Arxiv 2019** **Manuel Dahnert**, Alexander Rind, Wolfgang Aigner, Johannes Kehler:  
*Looking Beyond The Horizon: Evaluation of Four Compact Visualization Techniques for Time Series in a Spatial Context.*
- TUM 2018** **Manuel Dahnert**:  
*Master Thesis: Transfer Learning between Synthetic and Real Data..*

## REVIEWING

NeurIPS	<b>Conference on Neural Information Processing Systems</b> 2024
CVPR	<b>IEEE/CVF Computer Vision and Pattern Recognition Conference</b> 2022, 2023, 2024
ICCV	<b>IEEE/CVF International Conference on Computer Vision</b> 2021
ECCV	<b>European Conference on Computer Vision</b> 2022
TPAMI	<b>IEEE Transactions on Pattern Analysis and Machine Intelligence</b> 2022
WACV	<b>IEEE Winter Conference on Applications of Computer Vision</b> 2021, 2022, 2024

## TEACHING

Summer 2024 Winter '23/'24 Summer 2023 Winter '22/'23 Winter '21/'22 Summer 2021	<b>"Introduction To Deep Learning" (Head Teaching Assistant)</b> <b>1200</b> (Summer '21) - <b>1900</b> (Summer '24) students lecture webpage: <a href="https://niessner.github.io/I2DL/">https://niessner.github.io/I2DL/</a> lecture webpage: <a href="https://www.3dunderstanding.org/i2dl-w22/">https://www.3dunderstanding.org/i2dl-w22/</a> (Winter '22/'23) Organize course staff (5 - 15 student assistants), design and organize exam, handle and diligent organizational matters. Improve and implement automatic programming exercise evaluation system.
Winter '20/'21	<b>"3D Scanning &amp; Spatial Learning Practical Course" (Teaching Assistant)</b> Supervisor of groups of students conducting further research of 3D scanning algorithms.
Summer 2020 Winter '19/'20 Summer 2019	<b>"3D Scanning &amp; Motion Capture" (Teaching Assistant)</b> Teaching Assistant for the practical part of the course. Students had to implement basic concepts of the course as well as a larger group project.
Winter '18/'19	<b>"Visual Computing seminar" (Instructor)</b> Co-instructor for the seminar course " <i>Visual Computing</i> " in which students had to present current topics and papers in the field of Visual Computing and related areas.
Winter '17/'18	<b>"Game Physics" (Student Tutor)</b> Student tutor and lab assistant for the lecture " <i>Game Physics</i> " in which the students had to implement a mass-spring system, a rigid-body and a balls-in-the-box simulation as well as an open project in C++.