

Lukas Höllein

Curriculum Vitae | 20.04.1996 | German | [E-Mail](#) | [GitHub](#) | [Google Scholar](#) | [Website](#)

Research Interests

My research lies at the intersection of computer vision/graphics and machine learning, concerning mostly 3D reconstruction and generation. I'm especially interested in the creation of fully navigable 3D worlds with the help of generative AI.

Education

August 2021 – ongoing	PhD Candidate , Technical University of Munich, Germany PhD student with Prof. Dr. Matthias Nießner at the Visual Computing Group focusing on 3D reconstruction, world generation, and texturing
April 2019 – July 2021	Master of Science, Informatics , Technical University of Munich, Germany GPA – 1.1, graduated with high distinction <i>Machine/Deep Learning, Computer Graphics/Vision</i>
September 2015 – March 2019	Bachelor of Science, Informatics , Coburg University of Applied Sciences GPA – 1.0, graduated with high distinction <i>Software-Engineering, Computer Graphics/Vision</i>
September 2014 – June 2017	Apprenticeship: IT Specialist for Application Development HUK-Coburg & IHK Coburg, Germany GPA – 1.5, graduated with distinction

Experience

August 2021 – ongoing	PhD Candidate , Technical University of Munich, Germany Teaching Assistant for “Advanced Deep Learning for Computer Vision”, “3D Scanning & Motion Capture” and Master’s Thesis Supervisor. Advised 50+ students on neural rendering, novel-view-synthesis, 3D reconstruction, bundle adjustment, ARAP, style transfer, world generation, scene editing.
June-September 2023	Research Scientist Intern , Meta, Zurich, Switzerland Working at the Gemini group on multi-view image generation (ViewDiff)
March 2019 – June 2021	Software Developer (Full-Stack) , HUK-Coburg, Coburg, Germany <i>Java, Spring, Maven, REST, OSGi, Angular, React, SQL, API-Design</i>
September 2014 – March 2019	Dual Course of Study Programme , HUK-Coburg, Coburg, Germany Working as software developer while studying <i>Java, Spring, Maven, REST, OSGi, Angular, React, SQL, API-Design</i>
October 2017 – January 2019	Teaching Assistant in “Stochastics” , Coburg University of Applied Sciences, Germany <i>Probability Theory, Markov-Chains, Maximum Likelihood Estimation</i>
November 2018 – January 2019	Peer-Review of student reports (“Writing Fellow”) , Coburg University of Applied Sciences, Germany

Publications

* denotes equal contribution

Siggraph Asia 2025	WorldExplorer: Towards Generating Fully Navigable 3D Scenes Manuel-Andreas Schneider*, Lukas Höllein *, Matthias Nießner
NeurIPS 2025	IntrinsiX: High-Quality PBR Generation using Image Priors Peter Kocsis, Lukas Höllein , Matthias Nießner
ICCV 2025	3DGS-LM: Faster Gaussian-Splatting Optimization with Levenberg-Marquardt Lukas Höllein , Aljaž Božič, Michael Zollhöfer, Matthias Nießner,
ICCV 2025	QuickSplat: Fast 3D Surface Reconstruction via Learned Gaussian Initialization Yueh-Cheng Liu, Lukas Höllein , Matthias Nießner, Angela Dai
CVPR 2024	ViewDiff: 3D-Consistent Image Generation with Text-to-Image Models Lukas Höllein , Aljaž Božič, Norman Müller, David Novotny, Hung-Yu Tseng, Christian Richardt, Michael Zollhöfer, Matthias Nießner
CVPR 2024	ControlRoom3D: Room Generation using Semantic Proxy Rooms Jonas Schult, Sam Tsai, Lukas Höllein , Bichen Wu, Jialiang Wang, Chih-Yao Ma, Kunpeng Li, Xiaofang Wang, Felix Wimbauer, Zijian He, Peizhao Zhang, Bastian Leibe, Peter Vajda, Ji Hou
ICCV 2023 (Oral)	Text2Room: Extracting Textured 3D Meshes from 2D Text-to-Image Models Lukas Höllein *, Ang Cao*, Andrew Owens, Justin Johnson, Matthias Nießner
CVPR 2022	StyleMesh: Style Transfer for Indoor 3D Scene Reconstructions Lukas Höllein , Justin Johnson, Matthias Nießner

Talks

October 2024	TUMVision : Indoor Scene Generation From Diffusion Models, Munich
October 2024	Google : Indoor Scene Generation From Diffusion Models, Munich
June 2024	Voxel51 : 3D-Consistent Image Generation with Text-to-Image Models, Online

Awards

October 2024	Outstanding Reviewer Award (ECCV 2024)
April 2020	Best.In.Tum Certificate: Studies at top 2% of the faculty
June 2019	1st place in the “ITCO-Absolventenpreis” for my bachelor thesis Press Release
March 2019	Gold Medal for outstanding achievements in my bachelor’s degree
April 2018 – September 2021	Scholarship of the Elite Network of Bavaria in its “Max Weber-Program“ (German Academic Scholarship Foundation)

Skills

Technical	Python, C++, CUDA, Java, Javascript, Latex
Languages	German (native), English (C2)