Moritz Kappel

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Profile

Name	Moritz Kappel
Gender	Male
Date of birth	January 20, 1994
Place of birth	Bonn, Germany
Citizenship	German
Languages	German (native), English (fluent)

Positions

Since Feb. 2019 **PhD candidate**, *Institute for Computer Graphics, TU Braunschweig*, Braunschweig (Germany),
Topic: Neural Reconstruction and Rendering of Dynamic Real-World Scenes.
Under the supervision of Prof. Dr.-Ing. Marcus A. Magnor.

Education

Mar. 2020 **Research Visit (6 months)**, *Graphics, Vision & Video Group, Max Planck Institute for Informatics (MPII)*, Saarbrücken, Germany.
Under the supervision of Prof. Dr. Christian Theobalt.

Nov. 2018 **M.Sc.**, *Technische Universität Braunschweig*, Braunschweig, Germany, *focus on visual computing*.
Master thesis: "Learning Optical Flow from Long-Exposure Images".

May. 2016 **B.Sc.**, *Technische Universität Braunschweig*, Braunschweig, Germany.
Bachelor thesis: "Dense Image-Correspondences for Reflecting Surfaces".

July 2012 **Abitur** (German high school diploma), *Friedrich-Ebert-Gymnasium*, Bonn, Germany.

Research Experience

2019 - present **Computer Graphics and Vision Researcher**, *Institut for Computer Graphics, TU Braunschweig*, Braunschweig (Germany).
Research topics including machine learning and neural rendering for virtual avatars and panorama imaging.

2016 **Research Assistant**, *Institute for Computer Graphics, TU Braunschweig*, Braunschweig (Germany).
Research topics including stereo correspondence estimation for free viewpoint interpolation.

Teaching Experience

Teaching Assistant **TU Braunschweig**, *Braunschweig, Germany*.
Courses:

- Physics-Based Modeling and Simulation (Summer 2020, Summer 2023)
- Bildbasierte Modellierung (Summer 2022, Summer 2024)

Lecturer **TU Braunschweig**, *Braunschweig, Germany*.
Courses:

- Team Project (Winter 2021/2022)

Academic Service

Reviewer

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
- IEEE International Conference on Computer Vision (ICCV)
- Eurographics Symposium on Rendering (EGSR)
- IEEE International Conference on Image Processing (ICIP)
- Symposium on Vision, Modeling, and Visualization (VMV)
- IEEE International Conference on Virtual Reality (VR)
- Pacific Conference on Computer Graphics and Applications (Pacific Graphics)

Conference Organization

- Volunteer student for Symposium on Visual Computing and Perception (SVCP) 2017.
- Local Organizing Committee for Symposium on Vision, Modeling, and Visualization (VMV) 2023.

Awards & Honors

Since Dec. 2022 **Elected Member of AI Grid**.

Technical Skills

Programming Languages **Python, C++, C, Java**.

Graphics and Machine Learning **PyTorch, Tensor Flow, OpenGL, OpenCV**.

Miscellaneous **LaTeX, CMake, VS Code**.

Publications

Florian Hahlbohm, Fabian Friederichs, Tim Weyrich, Linus Franke, **Moritz Kappel**, Susana Castillo, Marc Stamminger, Martin Eisemann, and Marcus Magnor. Efficient Perspective-Correct 3D Gaussian Splatting Using Hybrid Transparency. In *Proc. Eurographics*, 2025.

Moritz Kappel, Florian Hahlbohm, Timon Scholz, Susana Castillo, Christian Theobalt, Martin Eisemann, Vladislav Golyanik, and Marcus Magnor. D-NPC: Dynamic Neural Point Clouds for Non-Rigid View Synthesis from Monocular Video. In *Proc. Eurographics*, 2025.

Florian Hahlbohm, Linus Franke, **Moritz Kappel**, Susana Castillo, Marc Stamminger, and Marcus Magnor. INPC: Implicit Neural Point Clouds for Radiance Field Rendering. In *International Conference on 3D Vision*, 2024.

Moritz Kappel, Vladislav Golyanik, Susana Castillo, Christian Theobalt, and Marcus Magnor. Fast Non-Rigid Radiance Fields from Monocularized Data. *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, pages 1–12, Feb 2024.

Florian Hahlbohm, **Moritz Kappel**, Jan-Philipp Tauscher, Martin Eisemann, and Marcus Magnor. PlenopticPoints: Rasterizing Neural Feature Points for High-Quality Novel View Synthesis. In T. Grosch and M. Guthe, editors, *Proc. Vision, Modeling and Visualization (VMV)*, pages 53–61. Eurographics, Sep 2023.

Marc Kassubeck, **Moritz Kappel**, Susana Castillo, and Marcus Magnor. N-SfC: Robust and Fast Shape Estimation from Caustic Images. In T. Grosch and M. Guthe, editors, *Proc. Vision, Modeling and Visualization (VMV)*, pages 33–41. Eurographics, Sep 2023.

Moritz Mühlhausen, **Moritz Kappel**, Marc Kassubeck, Leslie Wöhler, Steve Grogorick, Susana Castillo, Martin Eisemann, and Marcus Magnor. Immersive Free-Viewpoint Panorama Rendering from Omnidirectional Stereo Video. *Computer Graphics Forum*, 42(6):e14796 ff., Apr 2023.

Moritz Kappel, Vladislav Golyanik, Mohamed Elgharib, Jann-Ole Henningson, Hans-Peter Seidel, Susana Castillo, Christian Theobalt, and Marcus Magnor. High-Fidelity Neural Human Motion Transfer from Monocular Video. In *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, pages 1541–1550, June 2021. Oral presentation.

Moritz Mühlhausen, **Moritz Kappel**, Marc Kassubeck, Paul M. Bittner, Susana Castillo, and Marcus Magnor. Temporal Consistent Motion Parallax for Omnidirectional Stereo Panorama Video. In *Proceedings of the 26th ACM Symposium on Virtual Reality Software and Technology*, VRST '20, New York, NY, USA, 2020. Association for Computing Machinery.

Tobias Bertel, Moritz Mühlhausen, **Moritz Kappel**, Paul Maximilian Bittner, Christian Richardt, and Marcus Magnor. Depth Augmented Omnidirectional

Stereo for 6-DoF VR Photography. In *Proc. IEEE Virtual Reality (VR) Workshop*, pages 660–661, May 2020.

Marc Kassubeck, Talash Malek, Moritz Mühlhausen, **Moritz Kappel**, Susana Castillo, Marc-André Dittrich, and Marcus Magnor. Optical Quality Control for Adaptive Polishing Processes. In *Proc. IEEE Southwest Symposium on Image Analysis and Interpretation*. IEEE Computer Society, 2020.

Thiemo Alldieck, **Moritz Kappel**, Susana Castillo, and Marcus Magnor. Reconstructing 3D Human Avatars from Monocular Images. In Sorkine-Hornung A. Magnor M., editor, *Real VR –Immersive Digital Reality: How to Import the Real World into Head-Mounted Immersive Displays*, volume 11900, chapter 8, pages 188–218. Springer International Publishing, Cham, Mar 2020.