Kolja Bauer

PhD Student - Computer Vision & Machine Learning Group

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Education

2024–now	**ELLIS PhD, Machine Learning & Computer Vision Group**, *LMU Munich*. Supervised by Prof. Björn Ommer (LMU) and Peter Kontschieder (Meta). Research on large-scale generative models and their emergent representations.
2021 – 2023	**M.Sc. Computer Science**, *Karlsruhe Institute of Technology (KIT)*, GPA: 1.0 (with distinction). Thesis: "Reinforcement Learning for Deformable Object Manipulation", Grade 1.0/1.0.
2017 – 2021	**B.Sc. Computer Science**, *Karlsruhe Institute of Technology (KIT)*, GPA: 1.5. Thesis: "Cognitive User Modeling for Adaptive Serious Games", Grade 1.0/1.0.
2009 – 2016	**A-levels (Abitur)**, *Gymnasium Martin-Luther-Schule Marburg*, GPA: 1.0.

Selected Publications

CVPR 2026	Learning Long-term Motion Embeddings for Efficient Kinematics Generation. Nick Stracke*, **Kolja Bauer***, Stefan Baumann, Miguel Angel Bautista, Josh Susskind, Björn Ommer.
CVPR 2025	CleanDIFT: Diffusion Features without Noise. Nick Stracke*, Stefan Baumann*, **Kolja Bauer***, Frank Fundel, Björn Ommer. **(Oral)**.

Work Experience

2023 – 2024	**Research Intern**, *Torc Robotics Inc*. Developed diffusion-based synthetic data pipeline for autonomous driving simulation.
2022 – 2023	**Student Research Assistant**, *Institute for Autonomous Learning Robots, KIT*. Developed data collection pipeline and tooling for Imitation Learning.
2022 – 2022	**Student Research Assistant**, *Computer Vision for Human-Computer Interaction Lab, KIT*. Built assistive prototype for visually impaired people based on real-time semantic scene segmentation.
2020 – 2021	**Student Research Assistant**, *Fraunhofer IOSB*. Developed cognitive user modeling algorithms for adaptively adjusting the difficulty of educational games.
2019 – 2020	**Teaching Assistant**, *KIT*, Lecture: Theoretical Foundations of Computer Science.
2016	**Intern, Scene Understanding Team, R&D Department**, *Daimler AG*. Built a synthetic data collection pipeline in Blender3D for RGB-D plus GT semantic segmentation output.
Jan. 2015	**Student Internship**, *Visual Sensorics and Information Processing Lab, Goethe University Frankfurt*.

Awards & Recognitions

Oral	CVPR 2025
Scholarship	"Deutschlandstipendium" Scholarship (2019, 2022; awarded twice)
A-Levels	Awards from German Mathematical Society & German Physical Society (2016)

Voluntary Engagement

2022 – 2023	Programming courses for refugees, University Group EduRef
2017	International Youth Voluntary Service in Israel (January – August)

Others

Programming	Python, PyTorch, Distributed Training (DDP), SLURM, Linux, Java
Teaching	Head Teaching Assistant for lecture Image and Video Understanding (SS'25)
Languages	German (native), English (fluent), French (B2)
Interests	Volleyball, Surfing (River & Ocean), Hiking, Cycling, Swimming, Cooking