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OLIVER GROTH

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RESEARCH

Robotics – Artificial Intelligence
VLA Post-Training, Large-scale and Autonomous Robot Learning

EDUCATION

University of Oxford, 2017 – 2022
PhD Student in Robotics and Computer Vision, Advisors: Prof. Ingmar Posner, Prof. Andrea Vedaldi

Stanford University, 2015 – 2016
Visiting Student Researcher in Computer Vision, Advisor: Prof. Fei-Fei Li

Dresden University of Technology, 2011 – 2017
German Diplom in Computer Science, Advisor: Prof. Carsten Rother

HONORS

Carl Zeiss Diplom Award in Computer Science, 2017
Award for outstanding accomplishments in a Diplom or Master's Thesis in the domains of scientific computing, machine learning or image processing.

German Academic Scholarship Foundation, 2012 – 2017
Germany's most prestigious student fellowship awarded for outstanding academic achievements to the top ½ % of the German student population.

INDUSTRY RESEARCH

Gemini Robotics 1.5, September 2025
Worked on agentic orchestration of a state-of-the-art VLA.
https://deepmind.google/blog/gemini-robotics-15-brings-ai-agents-into-the-physical-world/

Gemini Robotics on Device, June 2025
Worked on post-training and inference time optimization of a state-of-the-art, on-device VLA.
https://deepmind.google/blog/gemini-robotics-on-device-brings-ai-to-local-robotic-devices/

SELECTED PUBLICATIONS

Offline Actor-Critic Reinforcement Learning Scales to Large Models
International Conference on Machine Learning (ICML), 2024.
J. T. Springenberg*, A. Abdolmaleki*, J. Zhang*, **O. Groth***, M. Bloesch*, T. Lampe*, P. Brakel*, S. Bechtle*, S. Kapturowski*, R. Hafner*, N. Heess, M. Riedmiller

Unlocking the Power of Representations in Long-term Novelty-based Exploration
International Conference on Learning Representations (ICLR), 2024.
S. Kapturowski*, A. Saade*, D. Calandriello*, C. Blundell, P. Sprechmann, L. Sarra, **O. Groth**, M. Valko, B. Piot

Goal-Conditioned End-to-End Visuomotor Control for Versatile Skill Primitives
IEEE International Conference on Robotics and Automation (ICRA), 2021.
O. Groth, C.-M. Hung, A. Vedaldi, I. Posner

RELATE: Physically Plausible Multi-Object Scene Synthesis Using Structured Latent Spaces
Advances in Neural Information Processing Systems (NeurIPS), 2020.
S. Ehrhardt*, **O. Groth***, A. Monszpart, M. Engelcke, I. Posner, N. Mitra, A. Vedaldi

ShapeStacks: Learning Vision-Based Physical Intuition for Generalised Object Stacking
European Conference on Computer Vision (ECCV), 2018.
O. Groth, F. B. Fuchs, I. Posner, A. Vedaldi

Visual Genome: Connecting Language and Vision Using Crowdsourced Dense Image Annotations
International Journal for Computer Vision (IJCV), 2017.
R. Krishna, Y. Zhu, **O. Groth**, J. Johnson, K. Hata, J. Kravitz, S. Chen, Y. Kalantidis, L.-J. Li, D. A. Shamma, M. S. Bernstein, L. Fei-Fei.

Visual7W: Grounded Question Answering in Images
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2016.
Y. Zhu, **O. Groth**, M. S. Bernstein, L. Fei-Fei.

PROFESSIONAL EXPERIENCE

Senior Research Scientist
DeepMind, London, United Kingdom; May 2024 – present
VLA post-training, on-robot RL, semantic exploration and agentic orchestration for robot learning

Research Scientist
DeepMind, London, United Kingdom; January 2022 – April 2024
Exploration algorithms for reinforcement learning (RL), large-scale offline RL

Research Scientist Internship
DeepMind, London, United Kingdom; January 2021 – June 2021
Research on artificial curiosity for learning of motor skills

Software Engineering Internship
Inoxision GmbH, Neuenmarkt, Germany; July 2017 – September 2017
Developed data-driven algorithms for document classification, retrieval, and semantic segmentation.

PUBLIC SPEAKING

AI & Law Podcast Series
"Was AI uns gebracht hat und wohin", Evil Legal 2021
German podcast series with IT lawyer Peter Hense on advancements in large language models and their implications for law, economy, and society.

TEDx Talk
Why Robots Need to Make their own Experiences, TEDxDresden 2018
Talked about physical intuition and its acquisition with computer simulations and machine learning.

COMMUNITY SERVICE

Academic Reviewing
Served as reviewer at BMVC 2020, ICRA 2021 and NeurIPS 2021

German Academic Scholarship Foundation
Elected spokesperson of ~200 scholarship recipients, Dresden, Germany; June 2013 – June 2014