Lukas Uzolas

Ph.D. Candidate in 3D Computer Vision and Graphics

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Education

Ph.D. | **Computer Science @ CGV** May 2022 – ongoing
Delft University of Technology *Delft, Netherlands*

M.Sc. | **Image Processing and Computer Vision** Sep. 2019 – Sep. 2021
PPCU, UAM, UBx *Hungary, Spain, France*

B.Sc. | **Human-Computer-Interaction** Oct. 2015 – Jun. 2019
University of Hamburg *Hamburg, Germany*

Experience

Research Intern May. 2025 – Aug. 2025
Google *Zurich, Switzerland*

- Improved the controllability of pre-trained 2D diffusion models with synthetic 3D data
- Implemented large-scale pre-processing, training, and evaluation pipelines for 2D diffusion models in JAX and Tensorflow
- Investigated and proposed research directions to stakeholders independently

Ph.D. Candidate May 2022 – ongoing
Delft University of Technology *Delft, Netherlands*

- Formulated research directions and consistently delivered projects on time, resulting in multiple publications at high-impact venues while being on track to graduate in the allocated time frame
- Guided students during their thesis projects as a co-supervisor, leading to 5 successful B.Sc. and M.Sc. graduations
- Created assignments and grading pipelines allowing for efficient evaluation of 100+ students, and assisted students with advanced imaging concepts as a teaching assistant in *Applied Image Processing* and *3D Visual Computing*

Research Intern *(remote, due to Covid pandemic)* Feb. 2021 – Jun. 2021
VCG SEAS, Harvard University *Cambridge, MA, USA*

- Initiated a research collaboration between Harvard University and the University of Bordeaux, resulting in my Master's thesis on 2D medical Domain Adaptation

Research Intern Jul. 2020 – Sep. 2020
MEDIC *Madrid, Spain*

- Explored and implemented different algorithms for extracting features from high frame rate videos of eyes, aiming to improve ocular refractive index calculations

Working Student Fullstack Development *(part-time)* Oct. 2017 – Feb. 2019
Senacor, Daimler AG, BOOM GmbH *Hamburg & Stuttgart, Germany*

- Realized multiple web development projects at various companies
- Demonstrated the feasibility of technical ideas to stakeholders by implementing and designing prototypes, leading to real-world business and marketing decisions

Student Supervisor in Software Development I & II *(part-time)* Oct. 2016 – July. 2017
University of Hamburg *Hamburg, Germany*

- Taught and examined software development and programming concepts

Awards and Honours

Honours M.Sc. Degree and Best of Class in IPCV Sep. 2021
Honours degree and best of class 2021 in Image Processing and Computer Vision

Erasmus Mundus Master Scholarship Sep. 2019
Fully funded graduate studies with an acceptance rate below 5 percent

Outstanding B.Sc. Degree in HCI Jun. 2019
Best Human-Computer-Interaction degree in the summer semester of 2019

Publications

Surface-Aware Distilled 3D Semantic Features, SIGGRAPH Asia 2025 [**paper**]
Lukas Uzolas, Elmar Eisemann, Petr Kellnhofer

MotionDreamer: Exploring Semantic Video Diffusion features for Zero-Shot 3D Mesh Animation, 3DV 2025 [**paper**, **site**]
Lukas Uzolas, Elmar Eisemann, Petr Kellnhofer

Template-free Articulated Neural Point Clouds for Reposable View Synthesis, NeurIPS 2023 [**paper**, **site**]
Lukas Uzolas, Elmar Eisemann, Petr Kellnhofer

Deep Anomaly Generation: An Image Translation Approach of Synthesizing Abnormal Banded Chromosome Images, IEEE Access 2022 [**paper**]
Lukas Uzolas*, Javier Rico*, Pierrick Coupé, Juan C. SanMiguel, and György Cserey

Scale & Walk: Evaluation of scaling-based interaction techniques for natural locomotion in VR [Translated], Mensch und Computer 2018 [**paper**]
Boysen, Yannic*; Husung, Malte*; Mantei, Timo*; Müller, Lisa-Maria*; Schimmelpfennig,
Joshua*; Lukas Uzolas*; Langbehn, Eike;

**equal contribution*

Skills

Neural Rendering and **3D Reconstruction** (Neural Radiance Fields (NeRFs), 3D Gaussian Splatting, Differentiable Rendering), **Generative Models** (Diffusion Models, Variational Autoencoders (VAEs), Autoregressive Models (ARs), Generative Adversarial Networks (GANs)), **3D Deformation Modeling** (Forward Kinematics, Deformation Fields), **Self-Supervised Learning**, **Machine Learning**, **Deep Learning Architectures**, **Python** (PyTorch, PyTorch3D, Tensorflow, JAX, Numpy, scikit-learn, OpenCV etc.), **C++** (OpenMP), **NodeJS** (HTTPS APIs, Express), **Javascript**, **Databases** (NoSQL, SQL), **Git**, **slurm**, **Linux**, **HTML**, **CSS**.

Languages

English *(Fluent)*, German *(Native)*, Lithuanian *(Intermediate)*, Mandarin *(Beginner)*