Lukas Uzolas

Rotterdam, the Netherlands (aiming to relocate)
Ph.D. Candidate in 3D Computer Vision and Graphics
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Summary Ph.D. Candidate specializing in image synthesis and 3D object dynamics. Extensive knowledge of 2D/3D machine learning and deep learning workflows in Python. Experience working in international and dynamic environments. Enjoy working on open-ended problems that require creative thinking and collaboration. Graduating in Spring 2026, I am looking for applied research opportunities at the intersection of Computer Vision and Computer Graphics.

Education

Ph.D. | **Computer Science @ CGV** May 2022 – ongoing
Delft University of Technology *Delft, Netherlands*
Topics: Neural Rendering, Dynamic 3D Reconstruction, 3D Animation, Generative Modelling

M.Sc. | **Image Processing and Computer Vision** Sep. 2019 – Sep. 2021
University of Bordeaux *Bordeaux, France*
Autonomous University of Madrid *Madrid, Spain*
Pázmány Péter Catholic University *Budapest, Hungary*
Awards: Graduated best of class, Erasmus Mundus Master Scholarship recipient

B.Sc. | **Human-Computer-Interaction** Oct. 2015 – Jun. 2019
University of Hamburg *Hamburg, Germany*
Awards: Graduated best of class

Experience

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

- Improved the controllability of pre-trained 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 in 3D Computer Vision and Graphics, and consistently delivered projects on time, resulting in multiple publications at high-impact venues
- Guided students during their thesis projects as a co-supervisor during weekly meetings, helping with research questions and methodology, leading to 5 successful B.Sc. and M.Sc. graduations
- Assisted students with advanced imaging concepts as a teaching assistant in *Applied Image Processing* and *3D Visual Computing* in Python and C++, and created assignments and grading pipelines allowing for efficient evaluation of 100+ students at a time

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

- Initiated a collaboration between Visual Computing Group at Harvard and the University of Bordeaux, resulting in my Master's thesis on Domain Adaptation for medical image segmentation
- Developed and evaluated a method for making normalization layers in deep neural networks more invariant to the domain gap present between training and inference datasets

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

- Explored and implemented algorithms for extracting features from high frame rate videos of eyes, for improving ocular refractive index calculations for simpler diagnostics of vision impairments

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

- Conceptualized and implemented web applications, developing backend logic in Node.js & C#, HTTPS APIs with Express, and creating user interfaces with Javascript & Vue.js
- Demonstrated the technical feasibility of solutions to stakeholders by proposing and realizing PoCs such as a intelligent car configurator, WhatsApp chatbots, and marketing apps for clients such as *Nivea* and *Germany Travel*

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 in Java

Publications

Surface-Aware Distilled 3D Semantic Features, SIGGRAPH Asia 2025 [**paper**, **site**]
Lukas Uzolas, Elmar Eisemann, Petr Kellnhofer
Topics: Self-Supervised Learning, Geometry Processing, Foundation Models

MotionDreamer: Exploring Semantic Video Diffusion features for Zero-Shot 3D Mesh Animation, 3DV 2025 [**paper**, **site**]
Lukas Uzolas, Elmar Eisemann, Petr Kellnhofer
Topics: Generative Models, Diffusion Models, Differentiable Rendering, User Studies, PyTorch

Template-free Articulated Neural Point Clouds for Reposable View Synthesis, NeurIPS 2023 [**paper**, **site**]
Lukas Uzolas, Elmar Eisemann, Petr Kellnhofer
Topics: Dynamic 3D Reconstruction, Neural Rendering, NeRF, Kinematics, PyTorch

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
Topics: Generative Models, Generative Adversarial Networks (GANs), Synthetic Data, PyTorch

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;
Topics: Virtual Reality (VR), User Studies, Unity
**equal contribution*

Skills

Domain Knowledge: Machine Learning, Deep Learning, Computer Vision, Computer Graphics, Image Processing, Neural Rendering, Generative Models, 3D Animation, Motion Fields, 3D Representations, 3D Reconstruction, Differentiable Rendering

Technologies: Neural Radiance Fields (NeRFs), Gaussian Splatting, Scene Representations, Diffusion Models, Variational Autoencoders (VAEs), Autoregressive Models, Generative Adversarial Networks (GANs), AWS, Databases (NoSQL, MySQL), Linux

Languages: Python, C++, JavaScript, Node.JS, Java, Matlab

Frameworks: PyTorch, OpenCV, Scikit, Numpy, Tensorflow, JAX, Pandas

Languages

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

Interests

Besides enjoying running and TTRPGs, I am currently learning Mandarin, where I sometimes like to build small applications to assist my learning journey [**example**].