Artur **Jesslen**

PhD student

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Research

My research lies at the intersection of Computer Vision, Machine Learning, and Computer Graphics. The main goal is to develop generative vision models that enable to **reliably** perceive the world. Specifically, I study computer vision from a generative perspective, with the hypothesis that vision systems must develop a **causal** 3D understanding using an analysis-by-synthesis approach. This direction of research has already demonstrated that these generative vision models are **robust**, efficient learners that can simultaneously **solve various** vision tasks.

Research Experience

Generative Intelligence Lab, University of Freiburg

PhD — *Jul. 2022 - Present*

Generative AI systems that learn self-supervised while being a safe, secure, and human understandable component of our everyday lives.
Supervisor: Dr. Adam Kortylewski

Visual Computing and AI, MPI-INF

Master thesis — *Sep. 2021 - Apr. 2022*

3D Hand Pose Estimation from a Multiview Setup of RGB and Event Cameras.
Supervisors: Dr. Vladislav Golyanik and Dr. Mathieu Salzmann

Visual Intelligence for Transportation, EPFL

Master project — *Sep. 2020 - Feb. 2021*

Generation of multi-modal distribution using cVAE for trajectory prediction.
Supervisors: Prof. Alexandre Alahi

Biorobotics Laboratory, EPFL

Master project — *Mar. 2020 - Aug. 2020*

Real-time estimation of ground reaction forces during human gait.
Supervisors: Prof. Auke Ijspeert and Dr. Dimitar Stanev

Work Experience

Midokura (Sony Group Company) — *Barcelona, Spain*

AI Researcher — *Feb. 2021 - Aug. 2021*

Tailoring novel deep learning methods for embedded systems (with low power and memory, i.e. <16Mb) to perform pose estimation and people tracking by using different techniques such as Quantization Aware Training (QAT).

Ouay — *Lausanne, Switzerland*

Full stack web developper — *Jul. 2019 - Feb. 2021*

Creation and development of a client and server software for a voice-controlled device and corresponding iOS/Android applications. Program a browser (Javascript, jQuery), a server (PHP, Laravel) and a database (SQL).

Education

University of Freiburg — *Freiburg, Germany*

PhD Studies — *2022 - Present*

Affiliated with the Generative Vision and Robust Learning group lead by Dr. Adam Kortylewski, and Prof. Thomas Brox's Computer vision group. I closely work under the co-supervision of Prof. Alan Yuille.

MPI-INF — *Saarbrücken, Germany*

MSc Exchange studies — *2021 - 2022*

Master's thesis as a visiting student in Prof. Christian Theobalt's Visual Computing and Artificial Intelligence Departement.

EPFL — *Lausanne, Switzerland*

MSc in Robotics — *2019 - 2022*

Specialization in Mobile Robotics

NTU — *Singapore, Singapore*

BSc Exchange studies — *2018 - 2019*

3rd year of BSc in the school of electrical and electronic engineering as an exchange student

EPFL — *Lausanne, Switzerland*

BSc in Microengineering — *2016 - 2019*

Multidisciplinary curriculum including mechanical and electronic engineering, materials science, and computer science

Languages

French	*Mother tongue*
English	*Full professional proficiency*
German	*Professional proficiency*
Estonian	*Elementary notions*

Teaching

- Seminar on Computer Vision
- Seminar on Deep Learning
- Linear Algebra
- Calculus
- C++ Programming

Summer Schools

Generative Modeling Summer School (GeMSS), June 2023

Publications

- *Jiacong Xu, Yi Zhang, Jiawei Peng, Wufei Ma, Artur Jesslen, Pengliang Ji, Qixin Hu, Jiehua Zhang, Qihao Liu, Jiahao Wang, Wei Ji, Chen Wang, Xiaoding Yuan, Prakhar Kaushik, Guofeng Zhang, jie liu, Yushan Xie, Yawen Cui, Alan Yuille and Adam Kortylewski (2023).* Animal3D: A Comprehensive Dataset of 3D Animal Pose and Shape. *IEEE / CVF International Conference on Computer Vision (ICCV)*.
- *Leonhard Sommer, Artur Jesslen, Eddy Ilg, Adam Kortylewski (2024).* Unsupervised Learning of Category-Level 3D Pose from Object-Centric Videos. *IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR)*.
- *Artur Jesslen, Guofeng Zhang, Angtian Wang, Alan Yuille, and Adam Kortylewski (2024).* Robust object classification via render-and-compare with 3d-aware deep networks. *European Conference on Computer Vision (ECCV)*.
- *Tom Fischer, Yaoyao Liu, Artur Jesslen, Noor Ahmed, Prakhar Kaushik, Angtian Wang, Alan Yuille, Adam Kortylewski, Eddy Ilg (2024).* iNeMo: Incremental Neural Mesh Models for Robust Class-Incremental Learning. *European Conference on Computer Vision (ECCV)*.
- *Bingchen Zhao, Jiahao Wang, Wufei Ma, Artur Jesslen, Siwei Yang, Shaozuo Yu, Oliver Zendel, Christian Theobalt, Alan Yuille and Adam Kortylewski (2024).* OOD-CV-v2: An extended Benchmark for Robustness to Out-of-Distribution Shifts of Individual Nuisances in Natural Images. *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*.
- *Olaf Dünkel, Artur Jesslen, Jiahao Xie, Christian Theobalt, Christian Rupprecht, Adam Kortylewski (2025).* CNS-Bench: Benchmarking Model Robustness Under Continuous Nuisance Shifts. *IEEE / CVF International Conference on Computer Vision (ICCV)*.
- *Xiaoding Yuan, Prakhar Kaushik, Guofeng Zhang, Artur Jesslen, Adam Kortylewski, Alan Yuille (2025).* Scaling 3D Compositional Models for Robust Classification and Pose Estimation. *IEEE / CVF International Conference on Computer Vision (ICCV)*.

Workshop organization

- Embodied Spatial Reasoning Workshop, ICCV 2025, Hawaii.
- Workshop for Out-of-Distribution Generalization in Computer Vision Foundation Models, ECCV 2024, Milan.
- Workshop for Out Of Distribution Generalization in Computer Vision, ICCV 2023, Paris.

Reviewer experience

- 1 journal paper for TPAMI (2025)
- 2 conference papers for NeurIPS (2022-2025)
- 11 conference papers for CVPR (2023-2025)
- 5 journal papers for IJCV (2023-2025)
- 6 conference papers for ICCV (2023-2025)
- 4 workshop papers for CVPRW (2023-2024)
- 1 conference paper for ECCV (2024)