Denis Zavadski

Curriculum Vitae

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Google Scholar



Research Interests

• Generative Image & Video Models • Diffusion & Flow Models • Efficient Large-Scale Models
• Controllable Generation • Representation Learning • Synthetic Data

Education

3/2023 - 2026 **PhD Candidate**, *Heidelberg University*, Germany, Thesis Area: Efficient and Controllable Data Synthesis, Quality Assessment of Synthetic Data
Supervisor: Prof. Dr. Carsten Rother, Prof. Dr. Stefan Roth
Funded by an ELIZA PhD scholarship (Konrad Zuse School of Excellence in Learning and Intelligent Systems)
Program requirements completed; dissertation submission and defense pending

1/2026 - present **Visiting PhD Candidate**, *TU Darmstadt*, Germany, Visual Inference Lab
Host: Prof. Dr. Stefan Roth

4/2020 - 9/2022 **M.Sc in Data and Computer Science**, *Heidelberg University*, Germany, Thesis topic: Continuous Arbitrary-Scale Image Synthesis with Patch-Wise Diffusion Models, Supervisor: Prof. Dr. Björn Ommer

3/2017 - 4/2020 **B.Sc in Applied Computer Science**, *Heidelberg University*, Germany, Thesis topic: Nonparametric Prediction of Plausible Object Motion
Supervisor: Prof. Dr. Björn Ommer

9/2015 - 2/2017 **Study of Physics**, *Heidelberg University*, Germany

Practical Experience

3/2026 – 9/2026 **ML Research Intern**, *Apple, Zurich, Switzerland*

- Research on large-scale text-to-image and text-to-video diffusion and flow models, trained on multi-node GPU clusters.
- Co-initiated a new research direction on video editing and co-led its technical development: defined the method and built the data and training pipeline.
- The project later grew into a larger team effort.

4/2020 – 1/2022 **Student Assistant**, *Heidelberg University, CompVis Group, Heidelberg Collaboratory for Image Processing (HCI), Heidelberg, Germany*
Implementation of deep neural network approaches for a cooperative industrial project in autonomous driving

Publications

- **D. Zavadski**, J. F. Feiden, C. Rother, ControlNet-XS: Rethinking the Control of Text-to-Image Diffusion Models as Feedback-Control Systems, ***ECCV'24 (Oral)***
- **D. Zavadski***, D. Kalšan*, C. Rother, PrimeDepth: Efficient Monocular Depth Estimation with a Stable Diffusion Preimage, ***ACCV'24***
- J. F. Feiden, T. Küchler, **D. Zavadski**, B. Savchynskyy, C. Rother, Online Video Depth Anything: Temporally-Consistent Depth Prediction with Low Memory Consumption, ***3DV'26***
- **D. Zavadski**, N. P. Tatsch, C. Rother, Product-Quantised Image Representation for High-Quality Image Synthesis, ***ICLR'26***
- D. Kalšan*, **D. Zavadski***, T. Küchler, H. Lee, S. Roth, C. Rother, A Framework for Low-Effort Training Data Generation for Urban Semantic Segmentation, ***ICPR'26 (Oral)***
- **D. Zavadski***, S. Heid*, D. Kalšan, S. Roth, C. Rother, Importance-Aware Low-Rank Distillation of Diffusion Transformers, ***ECCV'26***

Teaching Experience

Teaching Assistant	**Lecture - Intelligent Systems**, *2024*
	Lecture - Computer Vision, *2023 - 2025*
Co-Supervision	**Master's Theses**, *Co-supervised four Master's theses in generative modelling, model efficiency, synthetic data, and generative-model evaluation.*

Languages

• **German** (Native) • **Russian** (Native) • **English** (Fluent)

Coding

Python, PyTorch	**Advanced/Strong**, *6+ years of experience developing and training deep-learning and generative models.*
C++	**Basic**, *University-Level Knowledge.*