Dr.-Ing. Thomas Pöllabauer-Berkei

Technical Lead | Applied AI & Computer Vision

CONTACT

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EDUCATION

Dr.-Ing., Computer Science

Mar 2023 – Jan 2025

TU Darmstadt, Interactive Graphics Systems | Darmstadt, Germany

Thesis: *Advancing ML Algorithms for Object Localization in Data-Limited Scenarios*. Awarded *magna cum laude*.

M.Sc., Visual Computing

Oct 2017 – Feb 2020

TU Darmstadt | Darmstadt, Germany

B.Sc., Computer Science

Oct 2013 – Sept 2017

TU Berlin | Berlin, Germany

Abitur, Electronics & Technical Computer Science

Sept 2007 – Jun 2012

Höhere Technische Lehranstalt Steyr | Steyr, Austria

SKILLS

Core Competencies

Machine Learning | Computer Vision | MLOps | Kubernetes | OpenShift | Cloud-Native AI | Technical Leadership | Industrial AI | Synthetic Data | CI/CD | Software Architecture | Distributed Systems

Specialization

2D detection; 3- and 6-DoF object pose estimation; classification; semantic segmentation; 3D scene reconstruction; zero- and few-shot methods; generative models (Autoencoders, GANs, Diffusion); ML under limited data or compute.

Technical

Python (PyTorch, TensorFlow, Keras, NumPy, Scikit-learn, Pandas); C/C++; Java; SQL; HTML/CSS; Git; Linux; Bash/Zsh; Docker; SLURM; GitOps; LaTeX.

Leadership

PROFILE

Technical Lead and AI specialist with expertise in Computer Vision, Machine Learning, and cloud-native AI infrastructure. Experienced in leading industrial AI projects from research and prototyping to scalable deployment in production environments. Strong background in applied research, software architecture, MLOps, and technical leadership with experience across manufacturing, AR/VR, and infrastructure domains.

EMPLOYMENT HISTORY

Technical Lead

May 2025 – present

PROFI Engineering Systems AG | Remote

- Owns technical strategy, architecture, and delivery of AI-driven software products, focused on scalable ML systems and industrial analytics – including PROinfra, predictive maintenance for civil infrastructure such as bridges, roads, and retaining walls.
- Domain expert for Machine Learning, Computer Vision, and applied AI; leads deployment on Kubernetes and OpenShift.
- Coordinates engineering, product, and business stakeholders; pre-sales and technical consulting for customers and partners.
- Hires and mentors engineering talent.

Research Scientist, Deep Learning & Computer Vision

Apr 2020 – Dec 2024

Fraunhofer IGD, Virtual and Augmented Reality | Darmstadt, Germany

- State-of-the-art computer vision for object detection and localization, segmentation, and classification.
- Generative ML models (GANs, encoder-decoder, diffusion); synthetic data pipelines and domain adaptation for robust AI.
- Automated industrial quality inspection; scalable training and inference infrastructure for real-world deployment.
- Led industry collaborations in manufacturing, robotics, AR/VR, automotive, and infrastructure; supervised student research; published peer-reviewed work in CV, ML, and 3D vision.

Student Assistant, Computer Vision

Sept 2018 – Feb 2020

Fraunhofer IGD, Virtual and Augmented Reality | Darmstadt, Germany

- Data analysis, CI and testing, ML, and optimization for Computer Vision and Visual Computing projects.
- Built experimental software prototypes and evaluation pipelines.

Student Assistant, Editorial Staff

Oct 2013 – Sept 2014

Topography of Terror Foundation | Berlin, Germany

International Memorial Service

Oct 2012 – Sept 2013

Topography of Terror Foundation | Berlin, Germany

SELECTED PROJECTS

Project Lead – BAU-DNS

Mar 2023 – Dec 2024

Sustainable modular circular building renovation | Fraunhofer-wide Research Project | Darmstadt

Project Lead – SEC-Learn

Jan 2021 – Dec 2024

Sensor Edge Cloud for distributed learning | Fraunhofer-wide Research Project | Darmstadt

ICE train interior surveillance PoC

Mar 2022 – Sept 2022

Cooperation with Deutsche Bahn AG | 3rd Place, best Industrial Project, Fraunhofer IGD

Project Lead – DiffEd-Pose

Feb 2021 – Jan 2022

Object pose estimation from synthetic data via differentiable rendering-driven federated learning | Cooperation with Software AG

Project management; research design; scientific and technical writing; process documentation; conference and fair presentation; customer contact.

LANGUAGES

German: native

English: professional proficiency

RESEARCH

Doctorate: Dr.-Ing., *magna cum laude*, TU Darmstadt

Publications: 20+ peer-reviewed papers in Computer Vision and Machine Learning; see Google Scholar and ORCID

ACHIEVEMENTS

2. BMW-Fraunhofer Research Summit March 2023

Awarded best pitch by jury; invited to the BMW-Fraunhofer Technologietag

Software Campus Program to promote IT talent Feb 2021 – June 2022

Funded with 100,000€ by the Bundesministerium für Bildung und Forschung