

Tassilo Wald

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Research Background:

My research interest lies in self-supervised learning and multi-modal pre-training in healthcare which I have been pursuing for the last three years. Specifically, I explored self-supervised learning for 3D medical imaging, where I worked on developing and benchmarking foundation models and adapted them to various downstream tasks. Notably, I interned with Microsoft Health Futures in Cambridge, where I worked with multimodal medical data to develop CLIP models and fine-tune an LLM to conduct radiological report generation. Moreover, I led an industry collaboration with the German startup Floy where we developed a large pre-trained brain MRI foundation model for their industrial uses. Currently, I am leading the pre-training efforts of [The Human Radiome Project](#), a pilot project of the Helmholtz Foundation Model Initiative, where we develop a multimodal foundation model of all modalities in radiology and scale pretraining to hundreds of GPUs. Furthermore, I curated a [large-scale brain MRI dataset](#), and am maintaining a [comprehensive repository](#) of the most relevant SSL methods for 3D medical imaging to accelerate the community.

Experience:

Apr. 2020 – Jun. 2026: **German Cancer Research Center (DKFZ), Heidelberg**
PhD Student in Computer Science
Advisor: Prof. Klaus H. Maier-Hein

- Developing self-supervised learning methods and establishing benchmarks for medical foundation models [**CVPR Highlight 25, ICCV 25, MICCAI Challenge 25**]
- Advancing Cancer diagnosis for Brain Metastases [**NOA, ER-x**]
- Advancing the field of medical image analysis through rigorous benchmarking and architectural advancements [**MICCAI 24, TMLR 26**]
- Measuring how similar learned representations of independently trained neural networks are to each other [**NeurIPS 24, ICLR 25**]

May. 2025 – Aug. 2025: **Microsoft Research - Health Futures, Cambridge, UK**
PhD Internship

- Developing a multimodal foundation model on health data [**ECCV 26**]
- Fine-tuning an LLM for radiological report generation

Oct. 2019 – Mar. 2020: **FZI Research Center for Information Technology, Karlsruhe**
Student Assistant

- Training a video object detection method

Education:

Apr 2016 – Aug. 2019: **Karlsruhe Institute of Technology (KIT),**
M.Sc. in Electrical Engineering and Information Theory Ø_{1,3}

- Master thesis (1,0): “Combination of Temporal and Spatial Information Extraction Within a CNN for Improving Object Detection”
- Specialization in control theory and machine learning

Selected Publications (First & Equal Contribution):

1. **[ECCV 2026] Wald Tassilo**, Ibrahim Ethem Hamamci, Yuan Gao, Sam Bond-Taylor, ..., Fernando Perez-Garcia. "Comprehensive language-image pre-training for 3D medical image understanding". Under Review at ECCV. (**Internship Project at Microsoft Health Futures**).
2. **[ICCV 2025] Wald, Tassilo***, Constantin Ulrich*, Jonathan Suprijadi*, Sebastian Ziegler, Michal Nohel, Robin Peretzke, Gregor Köhler, and Klaus H. Maier-Hein. "An OpenMind for 3D medical vision self-supervised learning." arXiv preprint arXiv:2412.17041 (2024). ICCV (2025).
3. **[CVPR Highlight 2025] Wald, Tassilo***, Constantin Ulrich*, Stanislav Lukyanenko, Andrei Goncharov, Alberto Paderno, Leander Maerkisch, Paul F. Jaeger, and Klaus Maier-Hein. "Revisiting MAE pre-training for 3D medical image segmentation." CVPR (2025).
4. **[TMLR 2026] Wald, Tassilo***, Saikat Roy*, Fabian Isensee*, Constantin Ulrich, Sebastian Ziegler, Dasha Trofimova, Raphael Stock, Michael Baumgartner, Gregor Koehler and Klaus H. Maier-Hein. "Primus: Enforcing Attention Usage for 3D Medical Image Segmentation." Preprint (2025).
5. **[NeurIPS 2024]: Wald, Tassilo**, Constantin Ulrich, Gregor Köhler, David Zimmerer, Stefan Denner, Michael Baumgartner, Fabian Isensee, Priyank Jaini, and Klaus H. Maier-Hein. "Decoupling Semantic Similarity from Spatial Alignment for Neural Networks." In *The Thirty-eighth Annual Conference on Neural Information Processing Systems*, (2024) (**Collaboration with Google DeepMind**).
6. **[MICCAI 2024] Isensee, Fabian***, **Tassilo Wald***, Constantin Ulrich*, Michael Baumgartner*, Saikat Roy, Klaus Maier-Hein, and Paul F. Jaeger. "nnu-net revisited: A call for rigorous validation in 3d medical image segmentation." *International Conference on Medical Image Computing and Computer-Assisted Intervention*, pp. 488-498. Cham: Springer Nature Switzerland, 2024
7. **[NOA 2022] Irada Pflueger***, **Tassilo Wald***, Fabian Isensee, Marianne Schell, Hagen Meredig, Kai Schlamp, Denise Bernhardt, Gianluca Brugnara, Claus Peter Heußel, Juergen Debus, Wolfgang Wick, Martin Bendszus, Klaus H. Maier-Hein, Philip Vollmuth. "Automated detection and quantification of brain metastases on clinical MRI data using artificial neural networks" *Neuro-Oncology Advances*, 4(1), 2022. [[PDF](#)]

For all papers please check my website tawald.github.io or my [google scholar](#).

Selected Challenges & Hackathons:

1. **[MICCAI Challenge] 1st place of 13**
Jonathan Deissler*, **Tassilo Wald***, "Mediastinal Lymph Node Quantification (LNQ): Segmentation of Heterogeneous CT Data," 2023 [[Grand Challenge](#)]
2. **[MICCAI Challenge] 1st place of 20**
Fabian Isensee*, Constantin Ulrich*, **Tassilo Wald***, "Abdominal Multi-Organ Segmentation (AMOS) Challenge", 2022 [[Grand Challenge](#)]
3. **[HiDA Hackathon] 1st place of 4**
Tassilo Wald*, Michael Baumgartner*, Gregor Köhler*, "AI-HERO Hackathon for Energy-Efficient AI", 2022 [[Link](#)]

Services & Activities:

- **Invited Talk** at [Cohere](#)
- Outstanding Reviewer at CVPR 2025, and regular reviewer for ICLR, CVPR, ICML and NeurIPS
- Organizer of the [Heidelberg.ai](#) non-profit organization for researchers in the field of Artificial Intelligence since Feb. 2023.
- Maintainer of nnU-Net, a self-configuring method for 3D medical image segmentation, since 2023.