

NILS HÖHING

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PhD Candidate at University College Dublin (ML-Labs) working on benchmarking and spatial reasoning for Vision-Language Models. Experienced in NLP and Computer Vision with both academic and industry exposure. Seeking a 3-6 month research or engineering internship (available from Jan 2026) focussing on benchmarking and evaluation of LLMs/VLMs. I am passionate about building benchmarks that measure what they are supposed to measure. Happy to relocate.

EDUCATION

PhD in Machine Learning , <i>ML-Labs, University College Dublin</i>	09/22 – now
Research focus on benchmarking and spatial reasoning for Vision-Language Models (VLMs).	
Master of Computational Linguistics , <i>University of Heidelberg</i> (moved to PhD)	03/22 – 07/22
Bachelor of Computer Science , <i>Munich University of Applied Sciences</i>	09/18 – 02/22

GPA 3.6/1.4 US/GER, Thesis 4.0/1.0 US/GER

EXPERIENCE

Teaching Assistant and Tutor , <i>University College Dublin & University of Applied Sciences Munich</i>	10/19 – now
Big Data Programming, Introduction to AI, Human Language Technologies, Software Development I & II, Databases, Intelligent autonomous systems.	
NLP & Software Engineering Intern , <i>Alexandrya AI, Munich</i>	09/20 – 03/21
Built a browser extension for extractive summarisation, deployed via Google Cloud & Kubernetes. Worked with customers to refine semantic search and topic classification pipelines, improving F1-score.	
Internship Business Intelligence , <i>Amadeus Data Processing, Munich</i>	07/18 – 10/18
Planned and programmed a script that automated the compilation and evaluation of controlling data (excel sheets) thus reducing human workload and speeding up the process.	

PUBLICATIONS

Chain-of-Thought (CoT) Reasoning for Solving Puzzles	currently in progress
Benchmarking reasoning capabilities of CoT models on puzzles and fine-tuning open source models.	
Stronger Baselines for VLM Benchmarks	currently in progress
Using baselines as a means of evaluating existing benchmarks.	
Understanding Space Is Rocket Science - Only Top Reasoning Models Can Solve Spatial Understanding Tasks	arxiv
Designed and collected benchmark for spatial understanding in VLMs revealing strong improvements of CoT models over non-CoT models. Conducted human baseline incl. ethics approval.	
What's Left Can't Be Right - The Remaining Positional Incompetence of VLMs	ICML KLR Workshop 2023 / arxiv
Analysed shortcomings of existing spatial understanding benchmarks and fine-tuned CLIP models with synthetic data on SLURM cluster. Outperformed existing CLIP-like models on the "left" vs. "right" distinction.	

PROJECTS

Benchmark Blogpost	Blog
Wrote detailed introduction to benchmarks covering main tradeoffs and decisions for benchmark design.	
Open source contribution	Github
Implemented RocketScience benchmark in openbench following the inspect.ai evaluation framework. Sped up preprocessing by over 90% by replacing unnecessary write operations.	
Bachelor's Thesis	Thesis
Trained an image captioning model using only text (food reviews) and a pretrained image-text encoder. Demonstrated accurate and creative captions on images of foods.	
Autonomous Toy Car Project	Team project
Collaborated with a team to collect benchmark data, trained an object detection model, and deployed it using ROS and Docker, improving detection accuracy and speed. Improved docker layering reducing build time by more than 60%.	
Alexa Skill for Dementia Patients	Course project
Developed an Alexa Skill that helps elders remember sequences of tasks on AWS, using DynamoDB and S3.	

SKILLS, TOOLS & LANGUAGES

Programming Languages Experienced: Python, Java - Familiar: C, C++, Go, Javascript, Matlab, Haskell
Data Science & ML PyTorch, Huggingface, SpaCy, NumPy, Pandas, Inspect AI, SQL
Tools & Environments Git, Docker, SLURM, Unit tests, GCP, AWS
Relevant Coursework Semantic Technologies and Knowledge Graphs, Applied Mathematics, Machine Learning, Deep Learning, AWS "Developing on AWS" seminar
Languages German (native), English (C1/TOEFL 110 points), French (B1/DELF)