

Oliver Weißl

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Personal Profile

AI Researcher specializing in Deep Learning system testing and robotics, with formal training in Artificial Intelligence and Data Science and Industry experience in RAG and LLM/ GenAI solutions and deployment. Currently pursuing doctoral research on testing and validating deep learning systems through latent space analysis. Experienced in machine learning, Python, and evolutionary robotics, with research contributions spanning AI reliability, model evaluation, and autonomous systems.

Education

Technical University Munich

PhD in Generative Testing of DL Systems

Munich, DE | September 2024 - Now

- *Accepted Publications:* Targeted Deep Learning System Boundary Testing — TOSEM
- *In Revision:* HyperNet-Adaptation for Diffusion-Based Test Case Generation — TOSEM
- *Future Works:* Testing of VLMs & Neural Surrogates for CFD

Universiteit van Amsterdam

MSc in Information Studies: Data-Science

Amsterdam, NL | September 2023 - July 2024

- *Thesis:* Machine Learning Decoder for Topological Codes in 3 Dimensions

Vrije Universiteit Amsterdam

BSc in Artificial Intelligence

Amsterdam, NL | September 2020 - July 2023

- Part of the Honors program
- *Thesis:* Morphological-Noveltty in Modular Robot Evolution

Leopold-Franzens Universität Innsbruck

Erasmus Semester in Computer Science

Innsbruck, AT | October 2022 - February 2023

Work Experience

NorCom Information Technology GmbH & CO KGaA

Senior Data Scientist

Munich, DE | September 2026 - now

- Working on scaling RAG solutions fom thousands to millions of files.

fortiss GmbH

Scientific Researcher

Munich, DE | September 2024 - June 2026

- Conducted applied AI research within industry and public-sector projects, focusing on AI adoption and deployment in SMEs.
- Supervised Bachelor's and Master's research projects on Deep Learning system testing and validation.

Vrije Universiteit Amstedom

Research Assistant

September 23, 2026

Amsterdam, NL | September 2023 - April 2024

- Developed and maintained *Revolve2*, a research framework for modular robot evolution.
- Conducted research on sim-to-real transfer by improving robot modeling and sensor-driven adaptation.
- Published research findings in leading venues within evolutionary robotics and AI.

Vrije Universiteit Amsterdam

Teaching Assistant

Amsterdam, NL | April 2022 - June 2024

- Supported teaching in Machine Learning, Knowledge & Data, Computational Intelligence, and Human-Computer Interaction courses.
- Led practical sessions and tutorials with 50+ students, mentoring students and addressing technical questions.

Red Cross Austria

Paramedic

Salzburg, AT | October 2019 - June 2020

- Responsible for assessment of medical conditions in critical or emergencies
- Experienced in CPR, poly-trauma transportation, and immediate medical interventions

Sony DADC Europe Limited

IT Support Intern

Salzburg, AT | August 2017 & August 2018

Publications

Journals

- [1] O. Weissl, A. Abdellatif, X. Chen, *et al.*, “Targeted deep learning system boundary testing,” *ACM Transactions on Software Engineering and Methodology*, 2025.
- [2] J. Luo, K. Miras, C. Longhi, O. Weissl, and A. E. Eiben, “Lamarckian inheritance improves robot evolution in dynamic environments,” *IEEE Transactions on Evolutionary Computation*, 2025.

Conference Proceedings

- [1] O. Weissl and A. Eiben, “Morphological-novelty in modular robot evolution,” in *2023 IEEE Symposium Series on Computational Intelligence (SSCI)*, 2023, pp. 1066–1071.
- [2] O. Weissl and E. Egorov, “An equivariant machine learning decoder for 3d toric codes,” in *2025 International Conference on Quantum Communications, Networking, and Computing (QCNC)*, 2025.
- [3] J. Di Michele, O. Weissl, and A. Eiben, “Fertility during learning in evolutionary robot systems,” in *Proceedings of the Genetic and Evolutionary Computation Conference*, 2025.

Conference Workshops

- [1] G.-D. Kevin, O. Weissl, M. Karine, and V. K. Anna, “Interactive embodied evolution for socially adept artificial general creatures,” in *Artificial life conference*, 2024.
- [2] G. Merabishvili, O. Weissl, and A. Stocco, “Latent regularization in generative test input generation,” *arXiv preprint arXiv:2602.15552*, 2026.

Preprints

- [1] O. Weissl, V. Riccio, S. Kacianka, and A. Stocco, “Hypernet-adaptation for diffusion-based test case generation,” *arXiv preprint arXiv:2601.15041*, 2026.
- [2] X. Chen, O. Weissl, and A. Stocco, “Feature-aware test generation for deep learning models,” *arXiv preprint arXiv:2601.14081*, 2026.

Skills

Programming: Python (Pandas, PyTorch, NumPy, TensorFlow, OpenCV, HuggingFace etc.), vLLM,

Haystack, LangFuse, LangGraph, LiteLLM, Grafana, LangChain, SQL,

Miscellaneous: L^AT_EX, Git, Grafana, AWS.

General: GenAI, Deep Learning, Computer Vision, LLM, VLM, Robotics

Languages

English: Professional proficiency

German: Native proficiency