

Davide Wiest

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Profile

Computer science student with a research focus on machine learning. Values pragmatism, honesty, and rational optimism.

Education

Technische Universität Darmstadt Oct 2025–Sep 2028
B.Sc. Computer Science (Informatik); currently in the 3rd semester. Grade average so far: **1.23** (German scale, 1.0 = best); 73 credits after two semesters.

Gymnasium am Römerkastell, Alzey Sep 2016–Apr 2025
Abitur as best of year with a final grade of 1.0; advanced courses in Mathematics, Physics, Geography. Course representative (2022–2025).

Research

Independent research at Axym Labs; code and papers are public.

Kernelized Parameter Sensitivity Atlases (KPSA) Oct 2026
D. Wiest, A. H. Ariq, A. M. Chowdhury. *Kernelized Parameter Sensitivity Atlases for Amortized Conditional Interpretability.* arXiv:2610.12737.
Estimates which parameter groups of a neural network matter for a given input without running backpropagation per query; derived from a block decomposition of the empirical neural tangent kernel, with error bounds. For transformer feature attribution, about 3.7× the throughput at roughly a tenth of the GPU memory of backpropagation.

Improved Elastic Weight Consolidation (IEWC) Jun 2026
D. Wiest. *Improved Elastic Weight Consolidation as an Optimization Constraint for Continual Learning.* arXiv:2611.16039.
Re-derives EWC from a constraint that preserves earlier solutions; the resulting variant forgets less than EWC on classification, segmentation and language tasks.

Temporal Regularized Learning (TeReL) Sep 2026
D. Wiest. *Temporal Regularized Learning: Self-Supervised Learning Local in Space and Time.* arXiv:2611.17019.
Turns the VICReg objective into a causal, neuron-local learning rule: the network processes one observation at a time and sends no error signal across layers or time (a soft form of Slow Feature Analysis). 96.5 % linear-probe accuracy on an MNIST stream.

High-school research paper (Geography) 2024
"Analysis of Market Impacts of PV Expansion Using a Time-Series Forecast"; forecast of German PV feed-in up to 2030; awarded full marks (15/15).

Scholarships & Awards

Deutschlandstipendium, TU Darmstadt WS 2025/26–SS 2026
Funded by the Sigi und Hans Meder Stiftung.

Abitur Prize in Mathematics, German Mathematical Society (DMV) 2025

Best-of-year prize, Gymnasium am Römerkastell parents' association 2025

5th place, "Tag der Mathematik", RPTU 2024

Internships & Work

Data Science Engineer Intern, Etalytics Jun–Aug 2025
Worked on a time-series regression framework to better predict cost and energy savings on the EtaOne platform. Built a confidence-analysis mechanism for estimates; a script that detects computationally infeasible transformations via a complexity heuristic; an algebraic simplification step that sped up the transformation system; a regression model with changepoint detection, plus visualisation and tests.

Course Instructor, Learnist Feb–Jul 2023
Interactive teaching of programming basics (control flow, conditionals, loops) to small groups using Minecraft Education.

School internship, HDP GmbH Mar 2023
Two-week internship: implemented simple Java applications and algorithms.

Selected Projects

LetoReader 2024
Reading app for people who want to read faster or for longer, especially with attention difficulties. Over 10,000 Docker downloads and more than 40 returning users.

Clac3 2024–2025
Programming-language backend built on pattern matching: builds a decision tree from a syntax tree and a set of patterns, supports syntax-defining macros inside the program (metaprogramming), and runs the result through a built-in interpreter.

ContextFlow 2023–2024
C# library providing an abstraction layer over common LLM libraries; object-oriented architecture, comprehensive NUnit test suite and documentation.

Additional Courses & Activities

Travel: One-month trip through Switzerland, Spain, France and Italy with the EU's DiscoverEU programme.

Course: Introduction to Logic (Stanford Online).

Skills

Programming: Python, C#, F#; basic Java
ML & data: PyTorch, Hugging Face Transformers, Pandas
Software: Git, LaTeX, Visual Studio Code, Visual Studio
Languages: German (native), English (fluent)
Soft skills: Fast learner, teamwork, turning ideas into code