Niclas Dern

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EDUCATION

2024 **Visiting Student**, *UC Berkeley*

2022–2025 **BSc in Mathematics (minor: Computer Science)**, *Technical University of Munich*
I ranked top of the year (1st out of 115) every semester with a current GPA of 3.9/4.0. I completed advanced courses in Optimization and Probability Theory.

2020–2021 **Early Studies in Mathematics**, *Albert-Ludwig University in Freiburg*
I completed Real Analysis I & II during secondary school, earning the top grade in Real Analysis I and ranking in the top two out of 172 students.

PUBLICATIONS

2024 **Dern, N.**, Cunningham, J. P., Pleiss, G. Theoretical Limitations of Ensembles in the Age of Overparameterization. Submitted to ICLR 2025. arXiv:2410.1620.

2024 Kinder, A., Briese, F. J., Jacobs, M., **Dern, N.**, Glodny, N., Jacobs, S., Leßmann, S. LLM-Generated Feedback Enhances Performance in Writing Tasks: A Case Study in Teacher Education. Submitted to Computers and Education: Artificial Intelligence.

2024 Ailer, E., **Dern, N.**, Hartford, J., Kilbertus, N. Targeted Sequential Indirect Experiment Design. NeurIPS 2024. arXiv:2405.19985.

2023 Alberti, S., **Dern, N.**, Thesing, L., Kutyniok, G. Sumformer: Universal Approximation for Efficient Transformers. Workshop on Topology, Algebra, and Geometry in Machine Learning, ICML 2023. arXiv:2307.02301.

PROFESSIONAL & RESEARCH EXPERIENCE

2024 **Research Intern**, *Vector Institute*
Under the supervision of Geoff Pleiss, I investigated the theoretical and empirical properties of ensembles in the overparameterized regime. Using random feature regressors as a model, we found that ensembles of overparameterized models — in contrast to ensembles of underparameterized models — often mimic single large models, offering little additional regularization or generalization benefit. Our work is currently under submission at ICLR 2025.

2023–2024 **Co-Founder**, *Mathis*
I led a team to develop and launch Mathis (abimitmathis.de), an AI-powered grading assistant providing tailored feedback for high school math exams. Mathis helped over 150 students in their preparations for their A-level exams in 2024 and won the 2024 DINI Competition. We collaborated with Freie Universität Berlin on a study about AI-assisted education, now submitted to Computers and Education: Artificial Intelligence.

2023–2024 **Student Researcher**, *Kilbertus Group, Helmholtz AI*
I contributed to research on adaptive experiments for causal inference in confounded settings, leading to a paper in NeurIPS 2024.

2022 **Junior Consultant**, *TNG Technology Consulting GmbH*
I developed internal web applications using Spring Boot and React.

2021–2022	**Intern & Part-time Data Science Role**, *PHYSEC GmbH (IT Security Startup)* I conducted market analyses, created marketing materials, and contributed to software development in TypeScript.
2022	**Research Intern**, *Schober Lab, Institute for Microbiology, UK Erlangen* Conducted differential gene expression analysis based on RNA-sequencing data using R.

AWARDS

2024–	**Max Weber Scholarship**; awarded to particularly gifted students enrolled at Bavarian universities.
2022–	**Atlas Fellowship**, $50,000 scholarship; one of 128 fellows globally selected from thousands of applicants.
2022–	**German Academic Scholarship Foundation** (Studienstiftung des deutschen Volkes); awarded to less than 0.5% of German students for academic excellence and potential for outstanding contributions to society.
2022–2023	**GenDev-Scholarship** by CHECK24; awarded to ambitious computer science students in Munich to enable recipients to invest in personal tech projects and skill development.
2022–2023	**Suttner-Scholarship**; awarded by the Bertha von Suttner-Studienwerk to high-achieving students with a commitment to humanist ideas.
2021	**Baltic Olympiad of Informatics**, German Team Member; selected as one of the top 12 German participants, qualified via the German trials for the International Olympiad in Informatics (top 8).
2019–2020	**Winner, National Student Championships in Computer Science** (Bundeswettbewerb Informatik); among 6 winners out of approx. 1500 participants in a three-round competition.

ADDITIONAL ACTIVITIES

2023	**Co-Organizer**, *Effective Altruism Seminar, German Academic Scholarship Foundation* Co-led an introductory seminar on Effective Altruism for 60 scholars, the most applied-to seminar in the program of the German Academic Scholarship Foundation in 2023.
2019–2022	**Co-Founder**, *Political Youth Group*
2018–2020	**Coach**, *FT 1844 Freiburg Swimming Club* I swam competitively for five years; afterwards I coached younger swimmers.