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Formal educational training

Completed study programmes
Lecturer Training Programme. SDU, to be completed early 2026.

Participation in higher education courses and workshops
- Assessment. SDU, 2026.
- Leveraging Diversity for Teaching. SDU, 2025.
- Tools to Communicate with Impact in Academia – Empower Yourself in a Competitive Research Environment. SDU, 2025.
- Research-based Teaching. SDU, 2025.
- Evaluation and Empirical Data Collection. SDU, 2025.
- e-Learning Activities. SDU, 2025.
- Students as Learners. SDU, 2025.
- Basic teacher-training course designed for university teaching. Kiel University, Germany, 2019.

Participation in Higher Education Conferences
- Teaching for Active Learning conference (TAL). SDU, 2025.

Administrative tasks relating to education

- IMADA Study board substitute member. Since Dec 2025.

Experience of study programmes, supervision and examinations

Teaching since joining SDU
- **Advanced Machine Learning**. Main lecturer and examiner, Bachelor (AI), 7.5 ECTS. English. Ca. 40 students. Spring 2026.
- **Natural Language Processing**. Main lecturer and examiner. Bachelor (AI), 5 ECTS. English. Ca. 40 students. Fall 2025.
- **Computer Vision**. Co-teacher and examiner. Bachelor (AI), 5 ECTS. English. Ca. 30 students. Fall 2025.
- **Deep Learning**. Responsible teacher and examiner, Master (Data Science, Kolding). Fall 2025.
- **Advanced Machine Learning**. Main lecturer and examiner. Bachelor (AI), 7.5 ECTS. English. Ca. 30 students. Spring 2025.
- **Deep Learning**. Main lecturer and examiner. Master (Computer Science), 10 ECTS or Master (Data Science), 5 ECTS. English. Ca. 60 students. Fall 2024.

Teaching before joining SDU

- Knowledge Discovery and Data Mining (M.Sc.), Teaching assistant (2 hours/week tutorial sessions). Designed and graded exercises and exams, led tutorial sessions. Winter term 2019/2020. English. Ca. 30 students. Written exam. Kiel University, Germany.
- Information Systems (B.Sc.) Teaching assistant (2x2 hours/week tutorial sessions). Designed exercises and co-designed exams, graded exams, coordination of the tutorial sessions, substituted the professor in a lecture unit. Winter term 2019/2020. German. Ca. 100 students / ca. 20 per tutorial group. Kiel University, Germany.
- Information Systems (B.Sc.) Teaching assistant (3x2 hours/week tutorial sessions). Co-designed and graded exercises and exams, led tutorial sessions. Winter term 2018/2019, German. Ca. 100 students / ca. 20 per tutorial group. Written exam. Kiel University, Germany.
- Information Systems (B.Sc.) Teaching assistant (2 hours/week tutorial sessions). Graded exercises and exams, led tutorial sessions. Winter term 2017/2018, German. Ca. 100 students / ca. 20 per tutorial group. Written exam. Kiel University, Germany.

- Communication Systems (B.Sc.) Teaching assistant (2 hours/week tutorial sessions). Graded exercises and exams, co-designed exams, led tutorial sessions. Summer term 2015. German. Ca. 50 students. Written exam. Kiel University, Germany.
- Communication Systems (B.Sc.) Teaching assistant (2 hours/week tutorial sessions). Graded exercises and exams, co-designed exams, led tutorial sessions. Summer term 2014, German. ca. 50 students. Written exam. Kiel University, Germany.

Student supervision since joining SDU

- Co-supervising 5 PhD students (since 2025)
- Supervision of 1 guest PhD student. (April-June, 2026)
- Supervision of 1 guest PhD student (Feb-May 2025)
- Supervised or supervising 22 graduate theses (since joining SDU in Sept 2024)
- Supervised or supervising 6 undergraduate theses (since joining SDU in Sept 2024)

Student supervision before joining SDU

- Co-supervision of 3 remote PhD students (1 completed, 2 ongoing), University of Ulm, Germany (since 2022).
- Supervision of 1 lab rotation project and 1 Master's thesis, Radboud University, Netherlands (2023-2024).
- Supervision of 4 Master's projects with multiple students each (2021, 2022, 2023, 2024). University of Ulm, Germany.
- Supervision of 2 graduate theses and 1 undergraduate thesis. University of Kiel, Germany (2018-2019).

A list of supervised student projects can be found at https://lgalke.github.io/student-projects

Examinations

- External PhD examiner, University of Leiden, Netherlands. 2025.
- External PhD examiner, University of Ulm, Germany. 2025.
- External examiner for 2 Master's theses, University of Ulm, Germany. 2025.

Methods, materials and tools

My teaching follows the ARIVA model and combines face-to-face lecturing with inverted classroom elements, group work, take-home exercises, and project work. I collect anonymous student feedback throughout my courses. I have experience with portfolio, oral, and written exam forms.

For supervision, I use 1-to-1 meetings, 1-to-many sessions, and group project supervision, drawing on maieutic questioning and an unbossing approach that gives students ownership of their work.

I make use of digital teaching materials and tools. I have produced original teaching materials for Advanced Machine Learning, Natural Language Processing, and contributed to Computer Vision.

Educational development and applied research into teaching at university, including educational awards

I focused my development project of the lecturer training programme on large-language-model-assisted paper reading. I designed and experimented with a new teaching activity that I call LLM Paperstorm, whereby students learn to interact responsibly with AI technology through using AI methods to engage with literature in their respective fields of study.

I submitted a report on this development project to the Teaching for Active Learning conference (TAL) in 2025, which led to an oral presentation "LLM-assisted Paper Reading" and invitation to contribute a proceedings article (expected to appear 2026).

The teaching activity sparked interest among other teachers and led to an invitation to give a talk at the Teaching with AI -- Lunch event (January 2026).

In Spring 2025, I was nominated for the Faculty's teaching award.

Reflections on your own teaching practice and future development including student evaluations

A summary of the main features of my previous teaching practice as well as thoughts on your own future development in relation to teaching responsibilities ahead

My teaching practice focuses on research-based teaching and learning: having students engage with research problems early in their trajectory. In my Advanced Machine Learning course, for instance, the structure moves from research-led lectures conveying state-of-the-art methods, through practical exercises building foundational skills, to two projects where

students carry out small research projects themselves. This approach aligns with the course's learning objectives, SDU's principles of active teaching and learning, and my conviction that university education should spark curiosity and create reflection rather than merely transfer information. Ideally, my goal is to provide students with the foundations to become independent learners.

For structuring individual lecture units, I follow the ARIVA model, which sequences teaching through five phases: arrival and orientation, reactivating prior knowledge, informing, processing, and evaluation. This framework, grounded in learning psychology, helps ensure students actively engage with new material by connecting it to what they already know and applying it before moving on.

Since joining SDU, I have developed teaching materials for several new courses in the AI degree programme: Advanced Machine Learning, Natural Language Processing, and contributions to Computer Vision. Building these courses from scratch has allowed me to implement this research-centric philosophy from the ground up.

Looking ahead, I aim to contribute to the organization of the AI degrees through my role as substitute member of the IMADA study board. I am also planning to develop a new course on AI Safety, drawing directly on my research in interpretability and safe AI systems.

Reflections on how I have developed my teaching practice based on student evaluations and in interaction with students and colleagues.

I display a slide for anonymous feedback at the end of each lecture, making it easy for students to provide input from which the current cohort can still benefit. This practice has led to concrete adjustments during running courses, such as pacing changes and providing more worked examples where students indicated difficulty.

Colleagues observing my teaching noted that I could make more use of my voice and activate students more effectively. To address the former, I participated in the course on communicating with impact in academia. For the latter, I have learned to ask more questions during lectures and allow more time for students to formulate answers.

Student evaluations have been consistently positive. An open dialogue with students in the NLP and Computer Vision courses revealed that the course projects could be better aligned with the introductory material. Initially, project topics were fully free for student groups to choose within the scope of the course - a flexibility that was well received. However, in the next iteration, I will provide a default topic option to strengthen the connection between teaching content and assessment. Students also noted that attendance dropped when other groups presented their projects. To address this, I will introduce a peer review mechanism requiring at least two other groups to attend and provide feedback, with this peer feedback becoming part of the portfolio exam to increase both alignment and participation.

Through my development project in the Lecturer Training Programme (see above), I explored how to integrate large language models productively into learning. The LLM Paperstorm activity has students use AI tools to engage with scientific literature, with two complementary goals: learning to interact responsibly with AI while also developing critical evaluation skills for both source material and AI outputs.

Other university teaching issues that I consider important

The rapid adoption of large language models presents challenges that demand immediate attention in higher education. I see this as requiring a dual strategy: on one hand, teaching students how these systems work, how to interact with them effectively, and how to recognize their limitations; on the other hand, maintaining fair evaluation through clear guidelines on AI use in assessments.

Rather than treating AI as a threat to learning, I believe we should explore approaches that embrace AI technology while preserving skill development by making students curious and eager to learn. Project-based learning and hands-on assignments become even more important for building strong technical foundations. At the same time, activities like the LLM Paperstorm demonstrate that AI can be integrated in ways that enhance rather than replace critical thinking - students must evaluate model responses, which requires them to actually understand the underlying concepts.

More broadly, I believe our educational approach to AI should not create dependency on proprietary systems from a handful of companies. This connects to my research vision of developing safe and trustworthy AI systems -- values I aim to convey to my students alongside technical competence.