

Original article published in the Bündner Woche, January 29, 2025, p. 23

Research in Graubünden

Lighthouse for data science in Graubünden

DAViS combines science, practice, and innovation



Swiss-Ski validates the AI-Racer with data from the top skiers from the Super-G World Cup in St. Moritz.
Image: Stephan Bögli / Swiss-Ski

At the Institute for Data Analysis, Artificial Intelligence, Visualization and Simulation (DAViS) at the University of Applied Sciences of the Grisons, research, services, teaching and continuing education go hand in hand. Within a short space of time, DAViS has developed from a research and service center into an independent institute and is celebrating its first birthday this January.

Institute Director Heiko Rölke, who has managed DAViS since its inception, has contributed to this success. “With the support of the Canton of Graubünden, which wanted to promote scientific projects in the field of computational science, we laid the foundation for DAViS in 2018 together with the Swiss Institute of Allergy and Asthma Research in Davos,” explains Rölke. Experts from various disciplines work together at DAViS: Computer scientists, insurance mathematicians and, since last year, a biologist who specializes in data visualization. “Our team is deliberately diversified in order to analyse, visualize and simulate data from different perspectives,” explains Rölke.

Audi FIS SKI WC St.Moritz_2023_DSC0761This interdisciplinary approach is also evident in the research projects. The AI-Racer project recently received the Swiss Olympic Science Award. In this joint project with Swiss-Ski and other university partners – led by Martin Bünner, Head of Sports Technology at the UAS Graubünden – alpine downhill courses are simulated using 3D models, drone recordings and mathematical optimizations. “The Swiss-Ski athletes can experience the courses in virtual reality and optimize their skiing lines. This increases both efficiency and safety in competitive sport,” explains Rölke. The technology was recently used successfully at the Lauberhorn races. Another project is MONA (derived from the English word

“monastery”). The Innosuisse project combines spatial planning data, demographic analyses and economic data to develop scenarios for the sustainable reuse and continued use of sacral buildings. In addition to DAViS, the Theologische Universität Chur, a spatial planning office and a pension fund are also involved.

The degree programs are based on the institute’s research areas. Since 2021, DAViS has been offering a Bachelor’s degree in Computational and Data Science, which teaches students the fundamentals of data analysis and simulation in a practice-oriented way. The part-time Bachelor of Artificial Intelligence in Software Engineering started in fall 2024. Here, students learn how to use artificial intelligence in software development.

Rölke is optimistic about the future: “Through close cooperation with companies and institutions in Graubünden, we are making an important contribution to local development. At the same time, DAViS aims to attract students from all over Switzerland and abroad to Graubünden with its specialized courses and innovative research.”

Heiko Rölke and Daniela Heinen

Institute for Data Analysis, Artificial Intelligence, Visualization and Simulation (DAViS)

DAViS offers research and consultation in all aspects of modern data processing. The offer is rounded off by continuing education courses and the innovative Bachelor’s degree programs Computational and Data Science and Artificial Intelligence in Software Engineering. Further information at: fhgr.ch/davis



Heiko Rölke.

Image: University of Applied Sciences of the Grisons

Text translated with the support of AI.