

HELMHOLTZ

HELMHOLTZ INFORMATION & DATA SCIENCE PLATFORMS

Explore our opportunities in Data Science

The opportunities and challenges arising from the developments in information & data sciences are of fundamental importance for all research programs within the research fields of the Helmholtz Association.

The five platforms below are tasked with connecting the research communities, providing high-level research, offering various information & data science services, organising events, promoting exchange and training, and managing funding opportunities. They are designed to support research projects from all research programs that utilize information & data science technologies, helping you build networks within the Helmholtz Association.

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HiDA HELMHOLTZ Information & Data Science Academy

Data Scientists for the future of research

The Helmholtz Information & Data Science Academy (HIDA) is dedicated to the development of information and data science skills of scientists within the Helmholtz Association and beyond. Together with its partners, HIDA offers a comprehensive range of training opportunities, promotes the exchange of knowledge between scientists through funding programs and networking events, and supports the Helmholtz Centers in recruiting talent. HIDA also serves as the umbrella organization for the six HIDS schools, which currently train more than 330 PhD candidates at the interface between data science and the Helmholtz domains. Together, HIDA and the HIDS schools form Germany's largest postgraduate training network in the field of information and data science.

TRAINING

HIDA qualifies scientists and prepares them for the data-intensive future of research: HIDA organizes and coordinates numerous training activities with its partners, with topics ranging from basic programming courses to specialized data science challenges. Lecture series and a summer school supported by all platforms are part of the repertoire. It is rounded off by hackathons and conferences. Visit the HIDA Course Catalog for an overview of upcoming courses and events in Information & Data Science at all Helmholtz Centers. Use the Course Catalog to promote your own training courses within the Helmholtz community. With the HIDA course funding, HIDA supports the Helmholtz Centers in organizing data science events and ensures that the events are open to the Helmholtz community.

EXCHANGE AND NETWORKING

HIDA promotes the exchange of methods and skills by fostering exchanges within Helmholtz and with partners: Through the HIDA Trainee Network, doctoral candidates and postdocs from Helmholtz Centers can complete a 1-3 month research stay at another Helmholtz Center with funding.

To strengthen high-level collaboration, HIDA also helps data scientists from national and international institutions to organize a research stay at one of the 18 Helmholtz Centers. HIDA organizes bi-directional exchanges with strategic partners: Researchers from Helmholtz Centers have the opportunity to conduct research at an institution from the HIDA partner network, while scientists from partner institutions are invited to come to a Helmholtz Center.

SCOUTING

In order to attract as many promising candidates as possible to Helmholtz, HIDA organizes a wide range of recruiting activities such as career and networking events. In addition, HIDA's Data Science Job Board lists all open data science positions in the Helmholtz Association. To further promote outstanding positions, HIDA also posts a weekly job alert on social media.

DISCOVER HIDA

Learn more about data science research at Helmholtz in our newsroom and subscribe to our HIDA newsletter.

Get in touch with us:

hida@helmholtz.de

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Collaboration Made Easy

The vision of HIFIS is to empower scientists with digital services at every step of the scientific workflow. HIFIS fosters collaboration and facilitates integrated scientific workflows across all research fields, Helmholtz centres, external collaboration partners and Incubator platforms by offering a unified login, shared cloud services, organizing common education and training events, and adopting a de-central and modular approach. This stimulates innovation and knowledge exchange among the research centres.

HELMHOLTZ CLOUD

HIFIS provides more than 30 [Helmholtz Cloud Services](#). With these, you can collaborate on documents, train AI models, organize your group's work, publish your data. Helmholtz Cloud services are available to everyone at Helmholtz and their collaboration partners. Thanks to Helmholtz ID, you can login to all services with your credentials of your home institution.

A selection of services:

- [Scientific](#) - e.g., Helmholtz Research Software Directory, Sensor Management System
- [Collaborative](#) - e.g., Collabtex, Helmholtz Codebase, Events Management
- [Infrastructure](#) - e.g., Rancher managed Kubernetes, Codebase, Singularity
- [Supercompute](#) - e.g., HAICORE, GPU compute service, OpenStack
- [Storage](#) - e.g., Sync & Share, Data Projects, B2Share

HIFIS sustainably protects sensitive data by storing, processing, and transferring it in Helmholtz-owned data centers. The data thus remains within the German research landscape and is available to future generations of researchers without restriction. You can save time in both searching and storing of data.

RESEARCH SOFTWARE ENGINEERING

Today, researchers need the support of scientific software for most of their projects. Be it software packages developed in-house or third-party applications: The quality, traceability, and reproducibility of the research depend to a large extent on the software packages. HIFIS supports research software development for your research projects with a wide range of services.

[HIFIS Consulting](#) helps you with a broad range of topics around research software engineering, open source, licensing or questions about the implementation of software projects.

EDUCATION & TRAINING

HIFIS offers all Helmholtz researchers education & training in the field of research software engineering. Entry-level and advanced [courses are available](#) for a wide range of topics including programming, development tools and workflows, software publication and licensing, as well as individual consulting for research software-related topics. All courses and workshop [materials](#) are freely available online for self-study or to host your own courses.

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Get in touch with us:

support@hifis.net

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HELMHOLTZ AI

Artificial Intelligence Cooperation Unit

Accelerate your research - democratising AI for a data-driven future

We democratize AI and advance its capabilities for tackling frontier scientific questions while harnessing its power to solve the grand challenges facing research and society.

We are an application-driven artificial intelligence platform accelerating science across the Helmholtz Association. We enable the development and implementation of AI solutions while promoting collaboration and ensuring access to resources and expertise. We do this by offering dedicated AI consultancy services, computing resources, and project funding.

AI CONSULTING

With Helmholtz AI consulting, we empower all researchers from the Helmholtz Association to leverage AI methods and expertise for their datasets. The [Helmholtz AI consultant teams](#) can provide support with their deep expertise in AI methods, tools and software engineering for research projects. Working with our consultants comes at no cost, as collaborations are entirely scientific. The Helmholtz AI voucher system serves as a flexible, dynamic and transparent way to set up collaborations with the Helmholtz AI consultants at all six Helmholtz AI units.

Researchers can apply for voucher projects and work with [Helmholtz AI consultants](#) on a specific AI problem. That might encompass selecting, testing and implementing machine learning methods, transdisciplinary knowledge transfer and networking, enabling researchers through training and workshops, or support in creating and advertising high-impact benchmark datasets.

COMPUTING RESOURCES

Access to computing resources is key for the Helmholtz AI community to accelerate innovative AI applications. The "Helmholtz AI computing resources" (HAICORE) provide easy and low-barrier GPU access to the entire AI community within the Helmholtz Association. HAICORE provides two usage modalities: ad-hoc usage for initial playing with the data and/or AI methods and lightweight projects of up to 5,000 GPU hours per half-year. Find out [how to gain access and send your proposal here](#).

PROJECT FUNDING

One essential component of our mission is to initiate cross-cutting research collaborations and identify forward-looking research topics in applied ML and AI. That is why we provide competitive funding to address mid and long-term questions in the form of annual calls for Helmholtz AI projects that underpin the growth and strength of our network within and beyond the Helmholtz Association. Learn more on [how to apply here](#).

AI and ML technologies are revolutionizing industries, sciences, and societies alike.
Ready to dive in and harness the power of AI for your research?

DISCOVER HELMHOLTZ AI

Learn more about AI in science in our newsroom and subscribe to our newsletter.
Get in touch with us:

contact@helmholtz.ai

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HELMHOLTZ IMAGING

We catalyze scientific discovery from sensory measurements to knowledge.

Images capture the world of science. From nanotechnology to astronomy, and from particle physics to marine biology, images store spatially and temporally resolved information across all scales and research domains. Helmholtz Imaging's mission is to unlock the potential of imaging in the Helmholtz Association across all research domains and along the entire imaging pipeline, to improve leverage and accessibility of the innovative imaging modalities, applications and data treasures, and to enable the delivery of generalizable imaging solutions. All scientists can contact the platform for direct support for imaging-related inquiries or the connection with other imaging experts from Helmholtz. No imaging challenge is beyond our scope.

GET INVOLVED

- Become part of the Helmholtz Imaging Community. Helmholtz Imaging empowers and supports scientists in all aspects of imaging, on different occasions, at any point in their career, and at all levels. We offer a rich portfolio of research and support. All solutions and applications are always made available to the whole community. Find imaging expertise and project partners at [Helmholtz Imaging CONNECT](#). Gain an overview of the broad spectrum of novel imaging modalities and make it easy to find the experts you are looking for.
- Leverage the expertise of Helmholtz Imaging. Get in touch with us via [our support hub](#) - the gateway for all imaging-related requests be it support for data handling, consultation regarding software or methods, or research issues.
- Let's solve imaging challenges together. Start a Helmholtz Imaging Collaboration with us. You will benefit from our broad knowledge on the rich pool of methods that enable state-of-the-art solutions tailored to your problems. Help us share easy-to-use open-source imaging solutions. [Helmholtz Imaging Solutions](#) provide a framework to unify and simplify the process of installing software tools and reproducing published results. We curate a catalog of Helmholtz Imaging Solutions developed within our community.

LEARN AND EDUCATE WITH US

- We want to leverage synergies and share gained expertise and research results in seminars, schools, and workshops and the early engagement of external partners will benefit society. Events can be found on our [website](#).

FUNDING

- Get funding for your interdisciplinary research on imaging. Financial funding for cross-cutting research collaborations on innovative research topics in the field of imaging and data science can be requested through our annual Helmholtz Imaging Project Call for interdisciplinary collaborative research projects.

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Get in touch with us:

support@helmholtz-imaging.de

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HELMHOLTZ
Metadata
Collaboration

FAIR Research Data for Cultural Change

HMC – the Helmholtz Metadata Collaboration – develops and implements novel concepts and technologies for a sustainable handling of research data through high-quality metadata. In the Helmholtz Association, scientists produce, evaluate and analyze valuable research data, which are often very diverse.

It is hardly foreseeable to which extent today's research data are reusable and thus can contribute to solutions for future challenges. A good, structured documentation and publication of data considerably expands its potential for future applications. The concepts of sharing data require making it findable, accessible, interoperable and reusable – in short: FAIR. FAIR data is also easier to exchange within collaborative projects or with national and international partners. To enable Helmholtz Centers and researchers to describe data and its context comprehensively is one of HMC's main missions. It will allow data to be exploited with minimal effort for future research challenges, unleash the additional potential of Helmholtz data products, and make the Helmholtz Association visible as a world-class data producer.

HELMHOLTZ DATA FOR YOU

HMC addresses four Helmholtz stakeholder groups on FAIR and metadata topics:

- **Data producers:** Are you a researcher producing data and describing methods of data generation? HMC works with you to ease structured data documentation and convey FAIR aspects.
- **Data curators:** Do you develop standards and techniques to capture and document discipline-specific research data? HMC supports you on defining standards, workflows, best practices, and standard operation procedures.
- **Data repositories:** Do you collect re-search data for further use? HMC works with you on common data organization standards, publication concepts, and joint methods for metadata capturing.
- **Data re-users:** Are you a client of data repositories? HMC helps you e.g. by improving data structures through machine-readable data products or easily under standard interfaces to access Helmholtz data products.

OUR OFFERS

- **Services supporting FAIR:** Tools, components, and processes supporting FAIR research data are provided by our FAIR Data Commons group.
- **Training and community engagement:** HMC offers trainings, workshops, seminars, community meetings, and further events on FAIR and metadata topics.
- **Discipline tailored support:** HMC supports you through its domain-specific Meta- data Hubs for every Helmholtz research field. The HMC Helpdesk assists with all general questions on HMC concepts, metadata topics, and technical aspects related to metadata.
- **Funding:** Do you want to help establish FAIR handling of research data in the Helmholtz Association? Join HMC if you have a project idea and apply for funding in our annual HMC project call.

DISCOVER HMC

Get in touch with us:

info@helmholtz-metadaten.de

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