

# 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 seven 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 topics ranging from basic programming courses to specialized data science challenges. Lecture series and different seasonal schools with international partners are part of the repertoire. 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.

#### MOBILITY

HIDA promotes the exchange of methods and skills by fostering exchanges within Helmholtz and with international partners: Through the HIDA Mobility Program, Helmholtz researchers can complete a 1-3 month research stay at another Helmholtz Center with funding.

HIDA covers travel and accommodation costs, with funding of up to €2,000 per month.

An additional benefit: Researchers from international partner institutions also come to Germany for joint projects, enriching collaboration with fresh perspectives.

#### RECRUITING SUPPORT

In order to attract as many promising candidates as possible to Helmholtz, HIDA organizes recruiting activities such as career and networking events. In addition, HIDA's Data Science Job Board lists all open data science job 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](mailto: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, OMERO, Sensor Management System
- [Collaborative](#) - e.g., Collabtex, Helmholtz Codebase, Events Management
- [Infrastructure](#) - e.g., OpenStack, Codebase, Apptainer
- [Supercompute](#) - e.g., HAICORE, GPU compute service, Jupyter
- [Storage](#) - e.g., dCache, Sync & Share, 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.

### DISCOVER HIFIS

Get in touch with us:

[support@hifis.net](mailto:support@hifis.net)

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# HELMHOLTZ AI

## Artificial Intelligence Cooperation Unit

### Accelerate Your Research – Democratizing 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](mailto: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.

### DISCOVER HELMHOLTZ IMAGING

Get in touch with us:

[support@helmholtz-imaging.de](mailto:support@helmholtz-imaging.de)

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# <HMC> HELMHOLTZ Metadata Collaboration

## Better Research Through Better Metadata

Every discovery begins with data. Across the Helmholtz Association, researchers and experts generate vast amounts of valuable and diverse research data every day. These data hold answers to pressing scientific and societal questions – but only if their context, structure, and meaning are preserved.

The Helmholtz Metadata Collaboration (HMC) ensures that this knowledge remains accessible and understandable. By advancing high-quality metadata, shared standards, and sustainable practices, HMC helps describe research data in a consistent and future-ready way. In doing so, HMC unlocks the full potential of Helmholtz research data – for the innovations and solutions of tomorrow.

### METADATA MADE SIMPLE

HMC supports everyone who works with research data – from researchers and data stewards to repository managers and data re-users. We help data producers document their work clearly and efficiently. Data curators and stewards receive guidance on standards and workflows that strengthen quality and interoperability. Repositories and infrastructures benefit from support in organizing and enriching their collections. And data re-users gain access to well-described datasets that are easier to understand, combine, and apply in new contexts.

By bringing these communities together, HMC builds a shared metadata culture that fosters collaboration and ensures that valuable knowledge does not remain siloed.

### OUR SERVICES

HMC provides a comprehensive portfolio of services to strengthen metadata practices across Helmholtz:

- **Metadata Tools & Components:** Our FAIR Data Commons develops practical tools, interoperable components, and sustainable workflows to support structured metadata and interoperable research environments.
- **Tailored Support:** Research field-specific Metadata Units offer discipline-oriented & community-aligned solutions, while the Helpdesk provides hands-on guidance on conceptual, organizational & technical metadata questions.
- **Training & Community:** Workshops, seminars, networking events, and interactive sessions promote skills development, peer learning, and cross-domain knowledge exchange.
- **Funding Opportunities:** Annual HMC project calls support innovative metadata initiatives and strategic data management projects throughout the Helmholtz Association.

### DATA FOR THE FUTURE

Research data is more than a by-product of scientific work – it is a long-term asset. By strengthening metadata as the foundation of research data management, HMC ensures that knowledge remains discoverable, connected, and reusable across disciplines and generations. In this way, HMC helps transform today's data into tomorrow's breakthroughs.

### DISCOVER HMC

Get in touch with us:

[helpdesk@helmholtz-metadaten.de](mailto:helpdesk@helmholtz-metadaten.de)

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