HELMHOLTZ

The Helmholtz Incubator

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 Helmholtz president has therefore founded the "Helmholtz Incubator", a think tank of 40 high-ranking information & data science experts from all centers. They work together since 2016 to develop ideas and strategies that benefit the entire Helmholtz community - across research fields and centers.

Based on the recommendation of this Incubator, the directors of all Helmholtz Centers have created five platforms that are tasked to connect the research communities, provide high level research, offer various Information & Data Science Services, organize exchange and training options and manage funding opportunities. They are designed to support research projects from all research programs that utilize information & data science technologies and help you to build networks within the Helmholtz Association.

HiDA HELMHOLTZ
Information & Data Science Academy

HIDA: The Information & Data Science Academy for the Helmholtz Association

As Germany's largest postgraduate training network in information & data science, HIDA trains doctoral researchers at six Helmholtz Information & Data Science Research Schools. The core concept of the schools is the joint supervision of projects, each involving one PI from the participating Helmholtz programs and one PI from computer science / mathematics faculties at the partner universities. This guarantees a top-level training of the next generation of scientists and brings together hundreds of PIs from universities and the Helmholtz programs. In addition, HIDA funds researcher mobility, promotes further education programs, supports the recruitment of (international) top talent, and organizes outreach, courses, events, among others.

Learn and Connect

› Interested in Python, research data management, or advanced statistics? Visit our 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 trainings throughout the Helmholtz community. HIDA Course Funding also co-funds your data science courses.

› Career fairs, HIDA Lecture Series, Hackathons, Summer Schools, and much more: attend HIDA's diverse networking events and become part of our information & data science community. Check out our Event Calendar.

› Book the Berlin HIDA Event Space for your Helmholtz data science event for free.

New Horizons

› Interested in research at other Helmholtz Centers? With the HIDA Trainee Network, doctoral researchers and post-docs of Helmholtz Centers can complete a 1- to 3-month research stay at another Helmholtz Center with funding. The Helmholtz Visting Researcher Grant also allows international scientists as well as researchers from other institutions and industry to organize a research stay at one of the 18 Helmholtz Centers.

› Interested in an international exchange? Visit Israel and Norway for short-term research stays with our Friends of HIDA-Network.

› Do you want to host a visiting researcher for 1 to 3 months in your research group and work together on a data science project? Become a Helmholtz Host.

Discover HIDA

› Our Data Science Job Board lists all open data science positions in the Helmholtz Association and helps you recruit new talent.

› Learn more about data science research at Helmholtz in our Newsroom, subscribe to our HIDA Newsletter, and share the experiences from your research on our hida-blogs.

Get in touch with us

www.helmholtz-hida.de

✉ hida@helmholtz.de

HIFIS | HELMHOLTZ FEDERATED IT SERVICES

HIFIS: Helmholtz Digital Services for Science – Collaboration Made Easy

HIFIS – the Helmholtz Federated IT Services – supports scientific projects with IT resources, services, cloud services, consulting, and expertise from the collection, storage, linking, and analysis of research data to the publication of the results. HIFIS also supports the development of well-designed research software.

Helmholtz Cloud Services

› HIFIS supports Helmholtz Cloud Services, which include 20 applications. As central collaboration services, they are available for all Helmholtz employees in science as well as administration. Thanks to the Helmholtz-wide authentication and authorization infrastructure (Helmholtz AAI) you can login to all services with your credentials of your Helmholtz Center. The complete list of the services can be found at the Helmholtz Cloud Portal. A selection:

HIFIS Events
› Managing events for everyone
Mattermost
› Web based chat service
Notes
› Collaborative writing and sharing of Markdown documents
Jupyter
› Interactive computing
Helmholtz Codebase
› GitLab collaborative software development platform

Backbone

› 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 Development

› Today, researchers need for most of their projects the support of scientific software. 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 development. Entry-level and advanced courses are available. You can also request special courses.

Get in touch with us

🌐
www.hifis.net
✉
support@hifis.net

HELMHOLTZ AI | ARTIFICIAL INTELLIGENCE COOPERATION UNIT

Helmholtz AI: Democratizing AI Across the Helmholtz Association

Helmholtz AI is the research-driven platform for applied AI. Our mission is fostering creativity in different fields and identifying and leveraging similarities between applications. We integrate field-specific excellence and AI/ML prowess and improve the quality, scalability as well as the rapid availability of new methods and tools. In this way, Helmholtz AI supports the training of the current and next generation of scientists to enable the efficient and agile development and implementation of AI/ML assets across the Helmholtz Association.

Furthermore, Helmholtz AI labs study new scientific topics and strategies; they promote young talent and interdisciplinary aspects of AI.

You and Helmholtz AI

› Helmholtz AI consulting empowers all researchers in the Helmholtz Association to leverage AI methods and expertise. The Helmholtz AI consultant teams can support your research projects with AI methods, tools, and software engineering. It comes at no cost, as collaborations are entirely scientific. Check out the Helmholtz AI voucher system to set up collaborations with the AI consultants.

› Become a Helmholtz AI associate: With the Helmholtz AI associates, we are extending the network for applied AI within the Helmholtz Association to leverage the breadth of activities and strengths of our AI research.

› Keep your eyes open for our numerous events, such as hackathons, courses (often with HIDA and other platforms), and our annual Helmholtz AI conference.

Funding

› With the annual call for Helmholtz AI Projects we provide competitive, swift funding to address mid-term questions for cross-cutting research collaborations and forward-looking research topics in applied ML and AI.

Computing Ressources

› The Helmholtz AI Computing Resources (HAICORE) provide easy and low-barrier GPU access to the entire AI community within the Helmholtz Association. HAICORE offers ad-hoc usage for an initial toying with data and/or AI methods implementation or lightweight projects of up to 10,000 GPUh per six months.
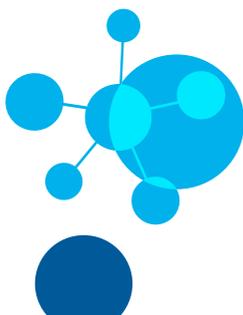
Get in touch with us

www.helmholtz.ai

contact@helmholtz.ai

HELMHOLTZ IMAGING

Helmholtz Imaging: Capturing the World of Science

Helmholtz Imaging's mission is to unlock the potential of imaging in the Helmholtz Association. Image data provide a substantial part of data being generated in scientific research. Helmholtz Imaging is the overarching platform to better leverage and make accessible to everyone the innovative modalities, methodological richness, outstanding expertise, and data treasures of the Helmholtz Association. All image-based research projects can contact the platform for direct support or the connection with other imaging experts from other Helmholtz programs.

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 Modalities. Gain an overview of the broad spectrum of novel imaging modalities and make it easy to find the experts you are looking for.

› Exploit the expertise of Helmholtz Imaging. Get in touch with us via our helpdesk – 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.

› Share your research data with colleagues all over the Association: Use Helmholtz Imaging Storage.

› 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.
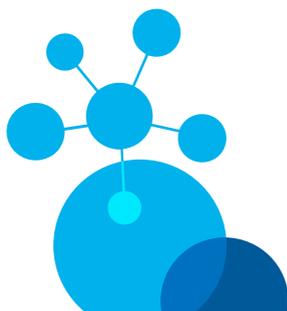
Get in touch with us
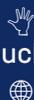
www.helmholtz-imaging.de

helpdesk@helmholtz-imaging.de

‹HMC› | HELMHOLTZ METADATA COLLABORATION

HMC: 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 understandable 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.

Get in touch with us

www.helmholtz-metadaten.de

info@helmholtz-metadaten.de

HELMHOLTZ

GEOMAR Helmholtz Center
for Ocean Research Kiel

Deutsches Elektronen-
Synchrotron DESY

Helmholtz-Zentrum
Hereon

Alfred Wegener Institute,
Helmholtz Center for Polar
and Marine Research (AWI)

Max Delbrück Center for
Molecular Medicine in the
Helmholtz Association (MDC)

Helmholtz-Zentrum Berlin für
Materialien und Energie (HZB)

Helmholtz Center for
Infection Research (HZI)

Helmholtz Center Potsdam –
GFZ German Research Center
for Geosciences

Forschungszentrum
Jülich

German Aerospace
Center (DLR)

Helmholtz Center for
Environmental Research (UFZ)

Helmholtz-Zentrum
Dresden-Rossendorf (HZDR)

German Center for
Neurodegenerative
Diseases (DZNE)

GSI Helmholtz Center for
Heavy Iron Research

CISPA – Helmholtz Center for
Information Security

German Cancer Research
Center (DKFZ)

Karlsruhe Institute of
Technology (KIT)

Helmholtz Munich

Research for grand challenges.