

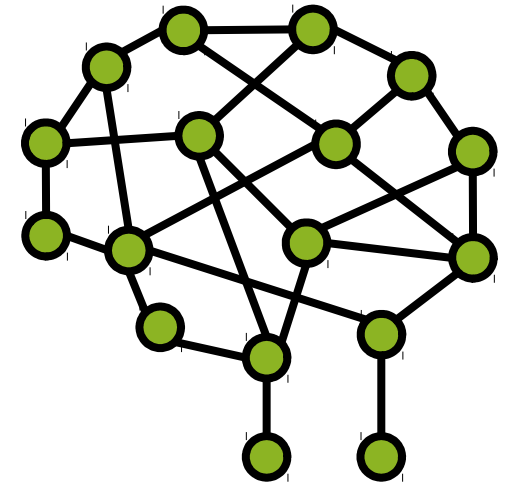
HELMHOLTZ INCUBATOR INFORMATION & DATA SCIENCE

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Helmholtz Incubator Information & Data Science

Overview

- The **Helmholtz Incubator** was founded in 2016 to bring together the community and their diverse competence and provide new impetus
- Development of concepts for new and innovative platforms to address long term challenges in the area of Information and Data Science
- Building up a network and community across centres, foster exchange
- Increase visibility of Helmholtz as a key player in the field of Information & Data Science



Helmholtz Incubator Information & Data Science

Combining all activities in an innovative framework

Helmholtz Information & Data Science Framework

HIDA & Schools

Training of doctoral researchers in a network of regional research schools

Helmholtz.AI

Platform for Machine Learning and Artificial Intelligence

Helmholtz Information & Data Science Incubator

HMC

Metadata and management of research data

HIP

Platform for Imaging

HIFIS

Technologies and systems for Big Data research

Pilot projects

1st round: 5 projects since 2017

2nd round: 8 projects since 2019

Helmholtz Incubator Information & Data Science

Helmholtz Information & Data Science Academy (HIDA)

- Since September 2018 six **Helmholtz Information & Data Science Schools** are in place that combine discipline specific knowledge and with innovative Information and Data Science methods
- In full extension, HIDA and the six Schools will train over 280 doctoral researchers until 2025 (incl. associated doctoral researchers as reported by the schools).
- Collaboration with HIFIS in Teaching & Training

HiDA | **HELMHOLTZ**
Information & Data Science Academy

 **HEIBRIDS**
HELMHOLTZ EINSTEIN INTERNATIONAL
BERLIN RESEARCH SCHOOL IN DATA SCIENCE

DASHH | Data Science in Hamburg
HELMHOLTZ Graduate School
for the Structure of Matter

MARDATA | **HELMHOLTZ**
SCHOOL FOR MARINE
DATA SCIENCE

MUDS | MUNICH SCHOOL FOR
DATA SCIENCE
HELMHOLTZ | TUM | LMU

HDSLEE | **HELMHOLTZ**
SCHOOL FOR DATA SCIENCE
IN LIFE | EARTH | ENERGY

 **HiDSS**
4HEALTH | **HELMHOLTZ**
INFORMATION & DATA SCIENCE
SCHOOL FOR HEALTH

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Helmholtz.AI

HELMHOLTZAI | ARTIFICIAL INTELLIGENCE
COOPERATION UNIT

- Research-driven hub for applied artificial intelligence (AI)
- enables the efficient and agile development and implementation of AI/ML assets across the whole Helmholtz Association
- research labs address interdisciplinary and field-specific aspects of AI, provide new scientific topics and strategies and promote young talent
- Full range of activities is set up: Helmholtz AI projects, Helmholtz AI consultants, roadshows, collaborations with internal, external and international partners
- collaboration with HIFIS:
 - Helmholtz AI consultants voucher system
 - HAICORE – Helmholtz AI Computing Resources, integration with HIFIS infrastructure; joint access board
 - Teaching & Training

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Helmholtz Imaging Platform HIP



- Connecting Imaging Sciences across the Helmholtz Association
- aims to position Helmholtz as a leading provider, developer, and scientific user of groundbreaking technologies in the field of scientific imaging and image analysis.
- Ramp-up phase in 2020: establishing structures and administrative setup, first project call
- Collaboration with HIFIS: set-up of HIP help desk

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Helmholtz Metadata Collaboration HMC



- Makes Helmholtz data treasures visible
- Support researchers in (automatically) describing their data by means of a suitable, standard-compliant description with metadata.
- Allow researchers to reuse Helmholtz research data for advanced methods of data processing and analysis.
- Ramp-up phase in 2020: establishing structures and administrative setup, first project call, development of first metadata tools
- Using HIFIS infrastructure

Helmholtz Incubator Information & Data Science

What's next?

- All platforms: **Expand our activities**
- Explore synergies and further collaborations to **further develop** Information & Data Science
- Develop **our competences** further – grow the network and increase the visibility on a national and international level
- Invest even more into **education and training in data science.**
- Set-up the **evaluation process** of all platforms
- Use the expertise and experts of all platforms to further develop Helmholtz' **Digitalization Strategy**



Digitalization Strategy

10 Goals of the Helmholtz Association

1. To use digital methods and technologies to research complex systems
2. To research smart and secure technological systems
3. To digitalize research infrastructures at Helmholtz
4. To provide overarching, sustainable information infrastructures
5. To promote and strengthen research through the use of digital tools
6. To research and develop the next generation of information technologies
7. To serve as a hub and magnet for scientists
8. To master national and international digital challenges through the transfer of knowledge and technology
9. To shape the digital transformation in science and administration at Helmholtz: digital cultural change
10. To conduct digitalized research on behalf of society

Digitalization Strategy

Main Fields of Activity

1. Digital Twins & Simulation

- Leverage synergies with Incubator platforms and between centers & research fields

2. Novel Digital Infrastructure

- Make use of existing activities like Helmholtz Data Federation and HIFIS for federated access

3. Research Software Engineering

- Extend Incubator RSE activities to all research areas and centers

Thank you! Questions?

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