ErUM-Data-Hub

Advancing Digital Transformation in

Germany by training ErUM-Scientists

WLCG/HSF Workshop 2024, DESY, 15.5.2024

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Ulla Lardinoix, Judith Steinfeld, Angela Warkentin (Presenting)

Bundesministerium
für Bildung
und Forschung

ERUM
DATA HUB

ErUM-Data-Hub: we are Digital Knowledge Agent

A growing Team...

Univ. Prof. Dr. Martin Erdmann
Projektleitung
© RWTH

Angela Warkentin
Teamleitung

Peter Fackeldey
Wissenschaftlicher Referent

Benjamin Fischer
Technischer Support

Stefan Fröse
Wissenschaftlicher Referent

Judith Steinfeld
Wissenschafts-kommunikation

Ulla Lardinoix
Verwaltung

Join us
Unser Team wächst:
jetzt bewerben!

with Big Goals...

Central Networking and Transfer Office for the Digital Transformation in German **Research on Universe and Matter** (ErUM)

→ Promote Networking

→ Intensify Exchange

→ Strengthen Communication

→ Expand Digital Competencies

and exciting Activities.

→ Schools & Workshops

→ Transfer (Industry Fairs)

→ Outreach (Blog, Social Media, Podcast)

→ Community Engagement

→ Community Support

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Disseminating digital competencies to a broad ErUM audience

Schools:

- Deep Learning Schools „Basic Concepts" & „Advanced Concepts"
- Fast & Efficient Python Programming

Train-the-Trainer Workshops:

- Deep Learning Train-the-Trainer „Basic Concepts" & „Advanced Concepts"

Expert Workshops:

- Sustainability in ErUM-Data
- Inverse Problems in ErUM-Data
- Research Data Management
- …

Community Workshops:

- Career Development Workshop
- Network Days
- Online Short-Pitch & Discussion Workshops
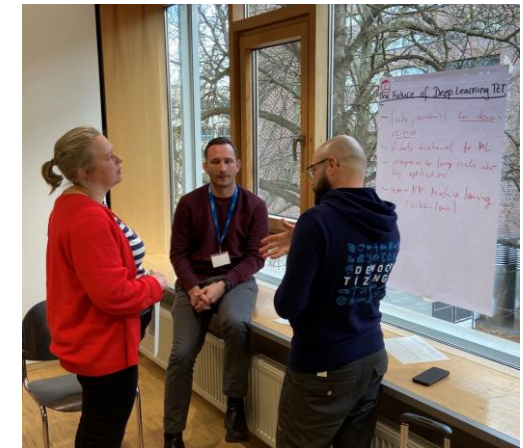
Over 600 ErUM-Scientists reached

Aachen, Bonn, Berlin, Dortmund, Hamburg, Meinerzhagen, München, Wiehl, Wuppertal, ...

Multidimensional & target group oriented event-concept:

going beyond knowledge transfer

ErUM-Data-Hub Events: Learnings

- "Should future schools & workshops take place in person?" 97%: yes

- A combination of lectures (90 min) and hands-on sessions (120 min) has proven to be most successful

- Schools should have a large (30-% of total time) practical part

- **Most requested support measure: a platform for materials**

  - „There are great materials, but where to find them?"

  - Overview of materials / links: streamlined, organized, up-to-date

  - „Seal of Quality" (moderated?)

ErUM-Community: most requested topics

General Topics:

- Deep Learning (Transformer, GANs, Autoencoder)
- Machine learning
- **AI & ethics (scientific integrity)**
- **Sustainable Research**
- Teaching methods & materials (flipped classroom)
- Bayesian analysis and statistics
- (Multivariate) Statistics
- Monte-Carlo methods

Programming:

- Git, good coding practices, debugging & bash scripting
- Programming languages (not as accessible ones as Python)
- More mathematical groundwork and how deep learning concepts are implemented in code (e.g. in PyTorch)
- Python Programming & Tools
- Software Packaging
- How to program in a memory/cpu friendly way
- Sustainable Programming

Big Data:

- Data Processing, Data Analysis & Data Formats
- Cross platform data management, data storage and data archival tools and systems

Outlook & Cooperation

Outlook:

- Events: https://erumdatahub.de/veranstaltungen/
- New Topics: Programming, Software Tooling, Sustainability, AI & Ethics, Career Development
- Event-Support: https://erumdatahub.de/en/event-support/
- Currently working on a material collection

Let´s work together!

- Want to speak at our events?
- Want to organize an event?
- Want to contribute materials?
- Want to reach the ErUM-Community?

Let´s connect!

We appreciate your ideas, questions & feedback

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Backup