

Introduction: Data Science infrastructure at WWU and NWZ

CMTC/IVV NWZ Mini-Symposium Data Science Technologies
2022

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eScience at WWU and NWZ

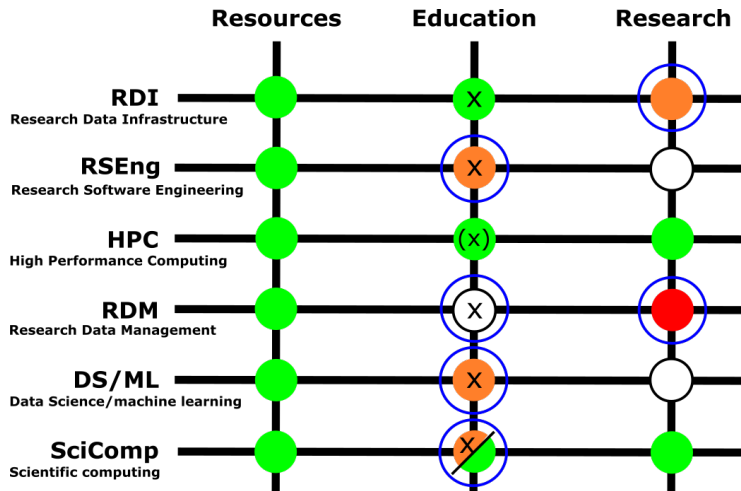
eScience at WWU

- ▶ <https://www.uni-muenster.de/EScience/>
- ▶ strong Research Data Infrastructure (RDI) and High Performance Computing (HPC)
- ▶ **Service Center Data Management** established for Research Data Management (RDM)
- ▶ **InterKIWWU** initiative for Data Science (DS)

eScience at NWZ

- ▶ <https://www.uni-muenster.de/NWZ/en/eScience-at-NWZ/index.html>
- ▶ information, events, (external) resources, lectures & courses
- ▶ focus on NWZ-specific RDM topics, e.g. Electronic Laboratory Notebooks (ELNs)
- ▶ and educational resources for Research Software Engineering (RSE)

Available resources and future directions



o = focus areas, x = new educational resources by IVV NWZ

Data Science infrastructure (by WWU-IT)

Data Science specific

- ▶ **Jupyterhub**, see <https://jupyterhub.wwu.de/hub/login>
- ▶ **Zivgitlab**, see <https://www.uni-muenster.de/IT/en/services/unterstuetzungsleistung/zivgitlab/index.html>
- ▶ programming tools like compiler, libraries, etc.

Other eScience infrastructure resources

- ▶ Sciebo cloud storage service, see <https://uni-muenster.sciebo.de/login>
- ▶ WWUcloud, see <https://confluence.uni-muenster.de/display/osc/WWU+Cloud>
- ▶ WWUkubernetes, see <https://confluence.uni-muenster.de/display/osc/WWU+Kube>

Further resources

- ▶ Confluence wiki, see <https://www.uni-muenster.de/IT/en/services/kommunikation/wiki/index.html>
- ▶ Mattermost chat services → **InterKIWWU**, RSE, ... - see <https://www.uni-muenster.de/IT/en/services/kommunikation/chat/index.html>

Educational resources: Data Science

Lectures & courses

- ▶ at faculty/institute/workgroup level
- ▶ NWZ level, see <https://www.uni-muenster.de/NWZ/en/Angebot/Lehre/index.html>
- ▶ at WWU-IT level, see <https://www.uni-muenster.de/IT/en/services/lehre/lehrveranstaltungen/index.html>

events

- ▶ today!
- ▶ InterKIWWU events
- ▶ related Research Software Engineering (RSE) events:
WWU RSE day 22.11.2022, ...

Services

- ▶ Data Science services? → RSE services?

Specific educational resources:

Data science/machine learning

Courses

- ▶ AI@WWU (Prof. Benjamin Risse)
- ▶ CeNoS courses: Introduction to Machine Learning (Oliver Kamps) and more
- ▶ in Chemistry/Pharmacy: Introduction to artificial intelligence (Oliver Koch)
- ▶ IVV NWZ self-study course Data Science/Machine learning (Martin Korth)
- ▶ more to come via InterKIWWU

Critical skills

- ▶ **Python & Python libraries** → talk Jonathan Radas
- ▶ **Data exploration & wrangling** → talk by Prof. Benjamin Risse
- ▶ **Methodological know-how** → talk by Stephan Rave

CMTC/IVV NWZ Mini-Symposium

Data Science Technologies 2022

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|--------------|--|
| 9-10am | DS infrastructure & incub.AI.tor
(Martin Korth, IVV NWZ & Friedrich Bach, REACH) |
| 10-11am | Python libraries for data science
(Jonathan Radas, WWU-IT) |
| 11am-12:30pm | Dimensionality reduction
(Prof. Benjamin Risse, WWU) |
| 12:30-2pm | Lunch break |
| 2-3pm | Model order reduction with pyMOR
(Stephan Rave, WWU) |
| 3-4pm | InterKIWWU (Oliver Kamps, CeNoS) |