I/O and Data Handling for HPC and ML Codes (on CLAIX)

Tuning Workshop 2025

December 2nd, 2025 | Aachen

Dr. Sandra Wienke, Dr. Jannis Klinkenberg, Philipp Martin, Dominik Viehhauser

Who We Are? – Organizations

- NHR4CES: NHR for Computational Engineering Science
  - NHR = National High Performance Computing: alliance of 9 German universities to provide resources and competencies to scientists at all German universities
  - RWTH + TU Darmstadt = NHR4CES: focus on computational engineering sciences
- IT Center of RWTH Aachen University, HPC team
  - Provides consulting and training services for HPC users
  - Conducts own HPC research and lecturing (Chair for High Performance Computing)
- HPC.NRW: The North Rhine-Westphalian Competence Network for HPC
  - Connection of expertise of the large HPC centers (Tier 2) with the consulting services of smaller centers (Tier 3)
- EDIH Rheinland: European Digital Innovation Hub
  - Advice on Digitalization, Artificial Intelligence and High Performance Computing
  - Focus on small and medium-sized enterprises, Start-ups, Spin-offs and public facilities
- WestAI: AI services from NRW for Germany
  - Consulting services and access to hardware resources on Nvidia H100 for academia as well as small and medium-sized enterprises*

* constraint to research and exploration activities

aiXcelerate 2025 - Welcome
Sandra Wienke

Overview

Organization
- Presentations
  - Hybrid format
  - Open for everyone
- Code & Tuning Activities → BYO code
  - On-premise only
  - Selection process due to limited seats

Questions – any time!
- In-person or
- "Raise hand" in Zoom & unmute your mic, or "Q&A" feature in Zoom

Course material
- Will be continuedly added to website
- Website: https://blog.rwth-aachen.de/itc-events/en/event/aixcelerate-2025/

Evaluation – Feedback Wanted!

aiXcelerate Evaluation Form

(valid until December 16th, 2025)

https://s2survey.net/aixcelerate_2025

aiXcelerate 2025 Survey

We are interested in your feedback on the aiXcelerate workshop (aiXcelerate website: blog.rwth-aachen.de/itc-eve aixcelerate-2025/)! The survey contains one page with socio-demographic questions, and one page per aiXcelerat You can preview all questions.

All data is collected and stored anonymously.

aiXcelerate sessions

Select all sessions that you attended. You will see a quick survey per session.

- ☐ Presentations (morning session)
- ☐ BYO Code (afternoon session)

What is your gender?

- ○ female
- ○ male
- ○ non-binary
- ○ wish not to provide

NHR4CES — NHR for Computational Engineering Science   HPC.NRW   EDIH Rheinland   WEST AI KI-Servicezentrum   it IT Center   RWTH AACHEN UNIVERSITY

Agenda for Today (Dec 2nd, 2025)

Time	Topic	Speaker
9:00 – 9:05	Welcome	Sandra Wienke (RWTH)
9:05 – 10:00	Does I/O Matter to Me?	Philipp Martin (RWTH)
10:00 – 10:30	Storage and I/O Technologies on CLAIX	Philipp Martin (RWTH)
10:30 – 11:00	Coffee Break	
11:00 – 12:00	Tips & Tricks & Tools with respect to I/O	Philipp Martin (RWTH)
12:00 – 12:30	From Thousands of Small Files to Few Very Big Files	Jannis Klinkenberg (RWTH)
Code Activies (BYO Code)		
12:30 – 13:30	Lunch Break (on your own)	
13:30 – 15:00	Code Activites	
15:00 – 15:30	Coffee Break	
15:30 – 17:30	Code Activities	