

# **SmartSim: facilitating inter-app communication for HPC and AI**

Holly Judge, Andrew Shao, Matt Drozt, Harvey Richardson

31/03/2026

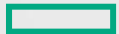
# Schedule

- 10:30 Overview of ML and HPC coupling and introduction to SmartSim
- 11:00 Practical use of SmartSim
- 11:30 Connecting to LUMI
- 12:00 Lunch
- 13:00 Use case examples
- 13:30 Hands on practical examples
- 15:00 Open session: Discuss using SmartSim in user's own applications or run more examples
- 16:00 Finish



# The HPE HPC/AI EMEA RESEARCH LAB

A short introduction to our team



# HPE HPC/AI EMEA Research Lab Summary

Partnering with leading organizations in the EMEA region to advance supercomputing R&D

## Our Role

- Deep technical collaboration with industry, academia, and public sector.
- Long term technical relationships surrounding research, co-design, and operational support.
- Focus on new technologies, driving HPE products.
- Create reusable PoCs & European IP

## Research Interests

- HPC, Cloud, AI, Quantum
- Data movement, analysis, workflows
- Heterogeneous computing and novel accelerators
- Programming languages and models
- Compilers and mathematical optimisation
- Performance portability, security, and containerisation
- Energy efficiency and sustainability

## Engagement Models

- Centres of Excellence
- Advanced Collaboration Centres
- Value-add projects
- Joint-funded research projects
- Nationally/internationally funded research projects
- Ph.D. and Placements

## The EMEA Team of Hewlett Packard Labs

# Advanced Collaboration Centers In EMEA

Coming soon:  
Daedalus at  
GRNet

## ARCHER2, UK



- Focus is on delivering science
- Revisiting LASSi - IO Monitoring and Analytics adding Power/Network
- Application tuning and GPU testbed
- MODA internship (energy and scheduling)
- New focus on high-end users and capability runs (> 2000 nodes)

## Shaheen 2&3, KAUST



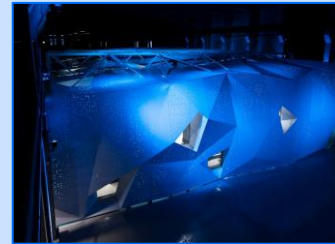
- Machine learning for Bioinformatics
- Numerical linear algebra libraries
- Combustion CFD
- Coupled visualization workflows
- Hybrid HPC+AI
- Sustainability topics in datacenter

## GW4 Isambard 3 + UoB Isambard AI, UK



- ARM ecosystem development
- Grace/Hopper + Slingshot tuning
- Hackathons
- Modular Data Center monitoring
- Secure workload enclaves
- Multitenant supercomputing

## LUMI, EuroHPC JU



- European Pre-Exascale
- Projects covering Containerisation, Easybuild and porting to LUMI-G (GPUS).
- Extensive training program and Hackathons
- Holistic Energy-Awareness
- Secure/Trustworthy HPC

## Setonix, Australia



- Australian national service
- Software containers, AI workloads on HPC
- Secure workflows
- Data center digital twins
- SKA workloads
- Holistic power management

## BlueLion, LRZ



- GPU readiness program
- Next-Generation System Management
- Holistic Power Management
- Containerized AI workflows in restricted network setup

# Thank You

