

“Rafforzamento e creazione di Infrastrutture di Ricerca”  
finanziato nell'ambito del PNRR Missione 4, “Istruzione e Ricerca” - Componente 2, “Dalla ricerca all'impresa” - Linea di investimento 3.1, “Fondo per la realizzazione di un sistema integrato di infrastrutture di ricerca e innovazione”, finanziato dall'Unione Europea – NextGenerationEU

## PATHOGEN READINESS PLATFORM FOR CERIC-ERIC UPGRADE (PRP@CERIC)



## Program

### 2024 October 28<sup>th</sup>

Conference Room #145 – DIEM (Building E - Fisciano Campus)

10:00 *School Opening and PRP@CERIC project presentation*

**Prof. Pierluigi Ritrovato** – *Scientific Coordinator of PRP@CERIC WP9: AI and Simulations-augmentedPlatform*

10:10 *interpretable machine learning in different biomedical applications*

**Prof. Dr. Michael Biehl** - University of Groningen (NL)  
Bernoulli Institute for Mathematics, Computer Science & Artificial Intelligence

11:30 *Moving to Next-Gen compute platforms*

**Dr. Paolo Bianco** - HPC and AI Business Dev for Western European Region – Dell Technologies

### 2024 October 29<sup>th</sup>

Remote Webinar

**Accelerating your application with AMD GPU**

14:00 **Preliminary Remarks** - *Bob Robey*

14:10 **Programming model for AMD GPUs** - *Bob Robey*

14:40 **HIP and ROCm** - *Giacomo Capodaglio and Bob Robey*

15:50 **Coffee Break**

16:10 **ML and AI on AMD GPUs** - *Alessandro Fanfarillo*

17:20 **Life Sciences at AMD - AlphaFold** - *Jose Noudouhouenou and Gina Sitaraman*

### 2024 October 31<sup>st</sup>

Remote Workshop

Data Parallelism: How to Train Deep Learning Models on Multiple GPUs

**Dr. Andrea Pilzer** – *Senior Architect at NVIDIA AI Technology Center*

9:00 **Course Introduction and environment preparation**

10:00 **Stochastic Gradient Descent and the Effects of Batch Size**

12:30 **Break**

13:30 **Training on Multiple GPUs with PyTorch Distributed Data Parallel (DDP)**

15:00 **Break**

15:15 **Maintaining Model Accuracy when Scaling to Multiple GPUs**

16:45 **Final review**

### 2025 January 16<sup>th</sup> (TBC)

Remote Webinar

9:00 – 17:00 Data Parallelism: How to Train Deep Learning Models on Multiple GPUs

### 2025 February/March

Remote Webinar

9:00 – 17:00 Building Transformer-Based Natural Language Processing Applications

**TBD** – AI & Education – NVIDIA