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CERN openlab: A Flagship Model for Industry-Science Computing R&D

CERN openlab is a unique public-private partnership initiative at CERN (European Organization for Nuclear Research), dedicated to addressing the ICT-related challenges of hosting the world's most advanced particle accelerator. Through strategic collaborations with leading technology companies, CERN openlab co-develops, tests, and integrates advanced computing solutions, ensuring timely access and training for the scientific community. Structured in three-year cycles, CERN openlab's Phase VIII, which runs from 2024 to 2026 inclusive, emphasises heterogeneous computing infrastructures, advanced storage solutions, low-latency interconnect technologies, artificial intelligence (AI) applications. Additionally, it supports diverse services both inside and outside CERN, enabling unique use cases and innovative solutions. It also explores emerging technologies like digital twins and new materials for long-term digital storage. The initiative's impact extends beyond high-energy physics (HEP), benefiting healthcare and climate modelling. CERN openlab further supports workforce development through training programs, summer student initiatives, and technical workshops, ensuring scientists and engineers gain essential computational expertise. CERN openlab fosters academia-industry collaboration, helping to maintain the European particle physics community's global innovation leadership and serving as a model for future partnerships.

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