CERN openlab: driving innovation in HEP computing

Federico Carminati
CERN, Switzerland

CERN openlab is engaged is a number of groundbreaking projects aimed at shaping the future of HEP computing. Thanks to its unique nature of private and public funding and its excellent relations with the ICT industry, CERN openlab has engaged leading companies and advanced users in these activities. Two of these projects directly address the projected shortage of computing resources for future High Energy Physics programmes.

Since few years, CERN openlab is exploring the possibility of using Deep Learning and generative neural networks to improve the particle transport simulation, obtaining a precise reproduction of the simulation results at a much higher speed. Recently CERN openlab held a large event at CERN to discuss the future role of Quantum Computing in High Energy Physics and the possible research directions. After a short introduction about CERN and CERN openlab, this talk will describe the CERN openlab activities in these two fields and will present the present results and future plans. We will conclude with a presentation of the challenges and collaboration opportunities in both fields.