Title: Post-doctoral researcher on deep learning methods for the reconstruction and analysis of data from the ATLAS experiment at the LHC

Deadline: November 17th, 2023

Job description:

The Particle Physics group at *Laboratoire des 2 Infinis – Toulouse* (L2IT) invites applications for a postdoctoral contract by colleagues with a PhD in particle physics or in computer science with a strong specialisation in machine learning. The successful candidate will join our group to work on the development of deep learning methods for the reconstruction and/or the analysis of data from the ATLAS experiment.

The L2IT team plays a leading role within the ATLAS collaboration in the reconstruction of charged particle tracks using deep geometric learning (GDL). The person joining us can contribute to this effort, for example by applying GDL to signatures not considered in the existing studies (electrons or tracks produced far away from the centre of the detector). Other applications of machine learning for the reconstruction or the analysis of ATLAS data are possible, depending on the candidate's experience and motivation.

L2IT is a laboratory created in 2020 to conduct research in fundamental physics with new numerical and theoretical approaches to data analysis. The laboratory's research focuses on particle physics, gravitational waves and the equation of state of nuclear matter, and is supported by the concurrent development of data science and analysis methodologies. L2IT is a joint research unit of CNRS/IN2P3 and *Université Toulouse III - Paul Sabatier*. The L2IT Particle Physics team contributes to understanding the dynamics of the scalar sector of the Standard Model through studies of the Higgs boson and of the polarisation of vector bosons. It contributes to the development of data reconstruction software for the new tracker (ITk) that the ATLAS collaboration will install for the high-luminosity phase of the LHC. The successful candidate will work in close collaboration with other members of the Particle Physics team, and with members of the Computing, Algorithms and Data team at L2IT.

The position is for two years, and a starting date as early as December 1st, 2023 is possible. The position is based in Toulouse, with the possibility to travel to CERN as needed. Applicants must hold a Ph.D. degree obtained less than three years before the start date at L2IT.

Candidates should submit a curriculum vitae, a publication list and a statement of their research interests, and should arrange to have three letters of reference submitted on their behalf.

Applications must be made via the *Portail Emploi* website (https://emploi.cnrs.fr/Offres/CDD/UMR5033-JANSTA-003/Default.aspx?lang=EN). Inquiries and letters of reference should be sent to Jan Stark <jan.stark@l2it.in2p3.fr>. The position will remain open until filled. To receive full consideration, applications should be submitted by November 17th, 2023.