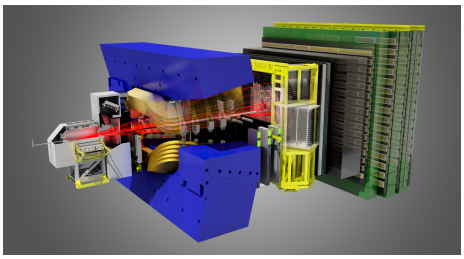

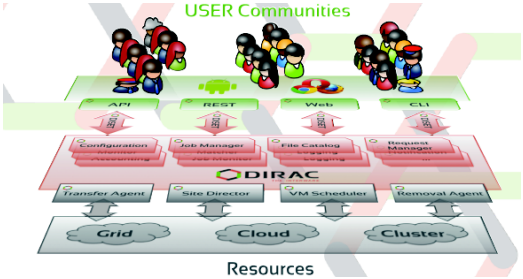


We are looking for Physics and Computer Science students who would like to join our LHCb group. LHCb is one of the four experiments operating at the largest accelerator in the world - Large Hadron Collider at CERN, Geneva.

The main aim of the LHCb project is the search for **New Physics** phenomena, processes that cannot be described in the framework of the Standard Model of particle interactions. The investigations are carried out by exploiting very precise experimental tests of properties of particles containing b or c quarks, by taking advantage of quantum world phenomena.

The LHCb project is a challenge not only for physicist but also for computer scientists. The large streams of registered data must be effectively selected and processed by using the distributed resources e.g. GRID or Cloud networks. The effective data analysis requires to use the machine learning techniques such as boosted decision trees or neural networks.

The activities of our group concentrate on the studies of fundamental CP and CPT symmetries in the particle systems composed on the quark-antiquark pairs (mesons), and on software development for distributed proccessing, as well as on Real Time Analysis reconstruction software.

The offered projects give opportunity to learn advanced data analysis methods in practice, as well as to learn modern programming techniques and tools (**unit testing**, **git**, programming languages such as **Python/C++14/C++17**, **Message Queue** systems and others).

The proposed projects can be extended in form of bachelor, master or doctoral thesis topics.

Detailed descriptions of some of the projects can be found here:
http://koza.if.uj.edu.pl/~krzemien/projects.html

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