Job Offer: Computer Engineer at IFIC-Valencia

Work Environment

The LHCb experiment at CERN (Geneva, Switzerland) was set up to explore the particle physics frontier through precision measurements with heavy flavoured hadrons produced at high-energy proton-proton collisions at the LHC. The capabilities of the detector together with innovative ideas have expanded the physics to other areas over the past years. With the upgraded apparatus and its pioneering real time analysis system (RTA), the experiment is opening to a new era with a broader physics potential.

The data delivered by the detector is triggered and fully reconstructed through a pioneering real time analysis system (RTA) based on GPU and CPU architectures. This enormous amount of real data along with the production of simulated data is distributed among dozens of research centers around the world, with the Worldwide LHC Computing Grid. This massive distributed computing infrastructure provides more than 12 000 physicists around the world with near real-time access to LHC data, and the power to process it.

As part of the computing group of the LHCb experiment you will be working at IFIC Valencia (CSIC-UV), developing key distributed computing technologies and infrastructure for the experiment, and contributing to the management of data processing at the Spanish WLCG Tier1 center (PIC) and the Barcelona Supercomputing Center-Centro Nacional de Computación (BSC-CSN). Availability for traveling to Barcelona and Geneva is required. IFIC is a joint center of CSIC and University of Valencia.

What we are looking for

- We are looking for a computer engineer with interest in a career in challenging research environments.
- Your attitude will determine our altitude. Building new ideas, based on complex technologies and industries, will be challenging. The team is key for success and your ideas, positivity and group focus, will make the difference.
- We are interested in your knowledge but your capacity is more important for us. There are tons of technologies around... The way you tackle and use them, will make the difference. We are trying to get the right balance between attitude and aptitude.

- <u>Research and learning capabilities</u>. Staying on the trends is key, to help us to make the right decisions.
- You will be working with <u>Distributed Computing technologies</u> and development experience is very welcome! ... But Don't worry if you have no idea. We will teach you what we know, and learn together.
- Willing to work with <u>hardware/software interface.</u> With the new LHCb RTA system for LHC Run 3, based on GPUs for its first level (HLT1) and standard CPUs for the second (HLT2), we are critically contributing to the experiment in these areas.

Preferred skills and qualifications

- Experience with Linux Systems management.
- Experience with devops / GitOps cultures, production environments.
- Continuous integration and deployment know how.
- Complex architecture design and development, and system integration. High load platform management experience is a plus.
- Distributed Computing technologies, HTC and HPC concepts knowledge.
- Python, C/C++, Java/Scala experience is very valuable.
- You are or willing to be, a language polyglot, due to the importance of getting the best of different technological stacks to create good solutions.
- Relational and Non relational database design and management experience.
- Knowledge of Containers (Singularity, Docker), and cluster management: ECS, Kubernetes, or Swarm.
- Proven experience with monitoring, alerting tools (Cloudwatch, Prometheus, influx, ELK,….)
- Terraform experience. Cloudformation, ansible, puppet, chef are very welcome.

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