Software developer for building galaxy cluster database

Organisation

The French Alternative Energies and Atomic Energy Commission (French : Commissariat l'énergie atomique et aux énergies alternatives, or CEA) is a key player in research, development and innovation in four main areas :

- defence and security,
- nuclear energy (fission and fusion),
- technological research for industry,
- fundamental research in the physical sciences and life sciences.

Drawing on its widely acknowledged expertise, and thanks to its 16 000 technicians, engineers, researchers and staff, the CEA actively participates in collaborative projects with a large number of academic and industrial partners.

The CEA is established in ten centres spread throughout France.

Division description

In the CEA, the direction of fundamental research leads scientific activities in physics, chemistry, biology, materials science, climate, and environmental science.

Research institute description

The Research Institute into the Laws of the Universe (Irfu), based in CEA-Saclay, is dedicated to experimental research in fundamental physics. 600 physicists, engineers and technicians are involved in internatinal research projects in the fields of particle physics, nuclear physics, and astrophysics, on various platforms such as particle accelerators, scientific satellites, and ground/space-based telescopes.

Context

The astrophysics department of CEA-Saclay, located just south of Paris, seeks a software developer to join a team of astronomers working on the European Research Council-funded M2C project. The multi-national team uses the largest objects in the Universe, galaxy clusters, to test the current cosmological model for structure formation. A major part of this project seeks to build a database of galaxy clusters detected and studied across the electromagnetic spectrum (X-rays, microwave, optical) with a variety of space- and ground-based telescopes. The contract is for 18 months and the salary will depend on the level of previous professional experience.

The candidate will be responsible for designing and building the database itself as well as interfaces that will allow project members to maintain the database contents. The candidate will be encouraged to interact with the M2C project members in order to learn more about the data and to find ways to optimise the tools. Additional travel funds will also be available to visit international project partners.

Outline of project objectives

1. Build a database of clusters of galaxies and the rich set of additional data from ground and space-based observatories.

2. Design an internal interface for project members to add/remove database entries.

3. Design an external interface for public access to database contents.

Candidate profile

Software engineer with good knowledge in software development, **Python** language and **SQL-like database** design. The candidate should have previous experience in software development project management, source code versioning management tools (**Git**/**Mercurial**) and IDEs (**Eclipse**, **PyCharm**, etc.). Previous experience in:

- web application developement, particularly with the **Django** framework,

- GUI application development, particularly with the Qt4/Qt5 GUI library

would be a plus but not a requirement.

The candidate should be organised and capable of meeting project deadlines. Good teamwork skills, positivity, adaptability and professionalism are also expected.

Applications

Applicants should provide a CV, a one page motivation letter describing previous experience in database development and at least 2 references.

- *Deadline for applications:* **June 30th, 2018**.

- *Contact:* Monique Arnaud (monique.arnaud@cea.fr).

- *Duration:* 18 months.

Aplications will be reviewed continuously until the position is filled.