



## **GTCR\_23\_23 Development Engineer Level I-III. Software area.**

**Publication date:** October 31st 2023

**Closing date:** November 30th 2023

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The public company Gran Telescopio de Canarias, S.A. (GRANTECAN) opens a selection process to hire, in an open call for its Development Group, a position of Development Engineer (Level I-III), in the area of Software, for the implementation of new observational capabilities of the Gran Telescopio Canarias (GTC).

GRANTECAN is looking for talented individuals with exceptional skills to operate, maintain, and improve the GTC for the execution of high-quality scientific projects in the field of Astrophysics. Therefore, they require individuals who are honest, responsible, transparent, respectful, and seek continuous improvement in their work. They should prioritize the safety of people, the integrity of the facility, efficiency, and innovation in their actions. Additionally, they should prioritize the responsible, sustainable use of resources with a primary focus on environmental care.

### **Functions**

The selected person will hierarchically report to the Head of Development. **The main function and activity assigned to the selected person fall within the following scientific and technical services:**

- 1) **High spatial resolution astronomical observations.** This involves implementing new scientific instruments that allow reaching the theoretical limit of the telescope in terms of spatial resolution, as well as adapting the telescope to achieve the necessary performance. This includes Adaptive Optics, Laser Guide Star, GRANCAIN camera, FRIDA spectrograph, data reduction pipelines, natural ventilation of the telescope, control adjustment of GTC's axes and mirrors, mirror alignment, co-phasing, Closed Loop Active Optics, segment deformation, GTC Control System update, and new operational tools.
- 2) **New observational capabilities with new or improved instrumentation.** This entails implementing other new scientific instruments for the GTC or improving existing instruments in accordance with the current instrumental plan. This includes OSIRIS+, EMIR, MIRADAS, HiPERCAM, CHORUS, their operational tools and pipelines, as well as adapting the telescope and infrastructure for their installation and operation.

The profile sought is a versatile developer in the areas of web development and data science. Its overall objective is on the one hand the creation of the necessary services to provide the system with all the necessary information on the observation programmes defined by the researchers, and to improve the efficiency in the planning, execution, and quality control of these, and on the other hand to facilitate the use of the data generated in the observation for scientific exploitation.

The tasks to be performed include, among others:

- Participation in the requirements engineering processes for the applications and services to be developed.
- Elaboration of the architectural design of applications and services to be developed.
- Implementation of the code of applications and services to be developed.
- Design and implementation of applications and services.
- Participation in the validation and verification processes of the applications and services to be developed (e.g. creation of tests...).
- Working in collaboration with the architecture and development teams.
- Installing and configuring the required software.
- Provide progress and problem reports.
- Write technical reports, manuals, and support documentation.
- Prepare presentations at project reviews.

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### **Section A (Minimum required qualification)**

- University grade in Software Engineering, Information Technologies or any other related areas at the first cycle [QF-EHEA](#) ( EQF 6).
- Driver's license for vehicles (level B or higher).

### **Section B (Essential experience, knowledge, and specific competencies)**

- Development with Javascript.
- Development with React.
- Use of HTML5 and CSS3.
- Development of service-oriented architectures.
- Development with Python.
- Development of REST APIs with Python (e.g. Django REST Framework, Flask RESTful).
- Creation and use of relational databases (e.g. PostgreSQL or MySQL/MariaDB) and object-relational mapping systems (ORMs).
- Use of other typical software engineering tools/technologies (version control systems, IDEs, UML).
- Spoken and written Spanish with the ability to carry out the required work activity.
- Spoken and written English with the ability to carry out the required work activity.

### **Section C (Experience and/or knowledge in complementary specific competencies)**

Additionally, it will be valued if the candidate has knowledge and/or experience in the following aspects:

- Knowledge and experience in project and team management using tools such as Redmine or Jira.
- Execution of medium-sized software projects, throughout the entire software lifecycle until successful deployment.
- Previous experience in the design and construction of software for the operation and/or maintenance of astronomical and/or scientific facilities.
- Development with Typescript.
- Development with other Javascript/Typescript frameworks (Angular, Vue.js).
- Use of Webpack for packaging modules and dependencies.
- Development of REST APIs with Javascript/Typescript (e.g. Node.js, Express.js).
- Security of REST APIs (e.g. JSON Web Token, OAuth).
- Creation and use of NoSQL databases.
- Use of reporting frameworks (e.g. Carbone.io).
- Use of frameworks or libraries for data visualisation (e.g. D3.js).
- Statistics and R programming language
- Predictive analytics
- Data visualisation
- Image processing, in particular scientific image reduction and astronomical spectra.
- Data science and machine learning techniques
- Development of automatic systems for basic scientific image and spectrum reduction.
- University master (second cycle QF-EHEA) and/or PhD (third cycle QF-EHEA) in areas related to the specific competences required.

### **Merits to value:**

- Section A: Applicants who do not meet these requirements will be discarded and not evaluated.
- Section B: Maximum score: 60 points. Applicants with a score lower than 30 points will be discarded.
- Section C: Maximum score: 40 points.

Evaluation will be based on the documentation provided by the interested person and a personal interview.

GRANTECAN is fully committed to equal opportunities and non-discriminatory recruitment. In equal conditions of merit and capability, the incorporation of personnel from the underrepresented gender in the professional group to which the position belongs will be favoured.

## **Contractual information**

The selected person will sign an indefinite full-time employment contract with GRANTECAN, subject to a six-month probationary period. The duration of this contract will be indefinite, commencing on the contract start date, with validity linked to the scientific and technical service specified in the "Functions" section. From a technical perspective, it is estimated that the implementation of these scientific and technical services will be completed around 2028-2029. All of this is in accordance with Article 23 bis of Law 14/2011, of June 1, on Science, Technology, and Innovation.

The workplace will be at the GRANTECAN headquarters in La Laguna (Tenerife). Occasional work may be required at the Roque de Los Muchachos Observatory (GTC) at an altitude of 2400 meters.

The gross salary will correspond to either Level I (€36,139.62), Level II (€40,508.36) or Level III (46.028,37), depending on the qualifications and experience of the selected person. Additional compensation will be provided for work carried out at the Roque de los Muchachos Observatory in La Palma.

### **Non-EU Citizens:**

Individuals who are not citizens of a country belonging to the European Union are invited to apply for this position. However, if selected, they will only be able to sign the contract with GRANTECAN once they have obtained the mandatory documentation to reside and work in Spain.

## **Application Submission**

Interested individuals must send their applications to the email address [r.personal@gtc.iac.es](mailto:r.personal@gtc.iac.es) before **November 30th, 2023, at 15:00 (WET)**, indicating the relevant reference number in the subject line. The applications should include the following documents (in PDF format):

- Cover letter, describing the motivations for applying to this call.
- Application form (available on our website).
- Curriculum vitae (CV).

**Applications submitted after the deadline or those that do not include the required documentation will not be considered.** In the case of incomplete applications, the interested person will have a period of three (3) days, starting from the date when the missing documentation is requested, but no later than the deadline.

For more information about this position, please contact the Head of Development at GRANTECAN, F. Javier Castro López-Tarruella (0034 922315031 or email [javier.castro.lopez@gtc.iac.es](mailto:javier.castro.lopez@gtc.iac.es)). For information about the process, please contact the Head of Administration at GRANTECAN, Lourdes González Rodríguez (0034 922425720 ext. 721 or email [lourdes.gonzalez@gtc.iac.es](mailto:lourdes.gonzalez@gtc.iac.es)). For more information about GRANTECAN, please visit our website: <http://www.gtc.iac.es>.