

CALL FOR AWARDING RESEARCH FELLOWSHIPS WITHIN PROJECT GRANTS AND R&D INSTITUTIONS

One Research Fellowship for a Master Student

1 Research Fellowship(s) (BI) is(are) open at the **FCiências.ID – Associação para a Investigação e Desenvolvimento de Ciências**, for the project/R&D institution PP-CLOUD: Participação na Experiência CLOUD /CENTRA-Ciências, CERN/FIS-COM/0008/2021, funded by the Fundação para a Ciência e a Tecnologia, I.P./MCTES through national funds (PIDDAC) under the programme concurso CERN 2021, under the following conditions:

1. **Scientific Area:** Physics Engineering

2. **Requirements for admission:** Hold a bachelor's degree in Physical Engineering, Physics or other related areas; Be available to stay at CERN, Switzerland for periods of one month, as stated in the motivation letter, as long as they do not interfere with class or exam periods; Have programming and simulation knowledge associated with physical or chemical systems; Have knowledge to perform statistical analysis of data and create its graphical representation;

If the academic degree required for this call has been awarded by a foreign higher education institution, it must comply with the provisions of Decree-Law 66/2018, of 16 August and Ordinance No. 33/2019, of 25 January.

3. **Additional optional skills and qualifications:** Have some knowledge of C/C++ programming being available to deepen it. Have knowledge of computer statistical data processing and the willingness to apply “machine learning” tools to large time series sets. Know the basic development of electronic instrumentation and sensors.

4. **Contracting requirements:** Presentation of the academic qualifications and/or diplomas. Enrolment in Mestrado em Engenharia Física or Mestrado em Física or similar.

5. **Work plan:** Participate in the data acquisition, monitoring and processing for the cloud experience, including the evaluation of artificial intelligence methods applied to time series. The student will participate, with our CLOUD partner group, in the planned data collection campaigns that take place at CERN and will be co-responsible for the data collection and monitoring infrastructure implemented in the experiment. Outside the campaign periods, the fellow will investigate the methods of processing data from the experience, in particular by applying clustering methods and identifying dependencies in the time series by artificial intelligence methods.

6. **Legislation framework:** Research Fellowship Holder Statute, in accordance with Law 40/2004, of 18 August, in its current version and the FCT Regulation for Research Studentships and Fellowships, in its current version (Reg. 950/2019 published in DR on 16th December: <https://dre.pt/application/file/a/127230968>, or at the FCT website: <https://www.fct.pt/apoios/bolsas/regulamento.phtml.pt>), and FCiências.ID Fellowship Regulation, as approved on 12th May 2020 (available at [Regulamento de Bolsas de Investigação Científica da FCiências.ID](https://www.fciencias.id/regulamento-de-bolsas-de-investigacao-cientifica-da-fciencias.id)).

7. **Place of work:** The work will be developed at the CENTRA at the Faculty of Sciences of the University of Lisbon under the scientific supervision of Professor António Amorim.

8. **Fellowship duration:** This position is initially opened for 6 months due to start in October 2022. The fellowship contract may be potentially renewed until the end of the project, in accordance with the provisions of Regulation of Research Fellowships from the Foundation for Science and Technology, I.P.

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9. **Monthly allowance:** The fellowship amounts to € 875,98 ,according to [table values](#) of the fellowships awarded directly by the FCT, IP. The fellowship holder will have a personal accident insurance and can ensure the right to social security through adherence to the voluntary social insurance scheme, if not covered by any other social protection scheme, pursuant to *Código dos Regimes Contributivos do Sistema Previdencial de Segurança Social*. The fellowship will be paid monthly by bank transfer

10. **Evaluation and selection process:** Candidates will be assessed by the quality of their CV and award a classification from 0 to 10 values based on the following criteria:

- A) Knowledge of programming and C/C++ programming.
- B) Working knowledge of Linux and Windows.
- C) Knowledge of statistical methods of data processing and including familiarity with R, Machine Learning tools or ROOT. .
- D) Ability to communicate orally in writing in English.

Criteria A, B, C and D will be classified from 0 to 10 points.

Candidates will be ranked using the following algebraic expression: $NF = 0.3A + 0.3B + 0.2C + 0.2D$

The considered candidates to assign the scholarship must have curricular classification above 7 points (in 10), assuming that the scholarship may not be assigned to any candidate.

The interview will be carried out by videoconferencing for the 3 candidates with the best classification, to which a grade from 0 to 10 will be assigned.

The final decision will result from the highest rating obtained by the expression:

$CF = 0.5NF + 0.5\text{Interview}$.

11. **Selection Committee:** President: Professor António Amorim; Members: Professor António Tomé (U. Beira Interior) e Professor André Moitinho da F. Ciências and replacement member Professor José Figueiredo (F. Ciências).

12. **Publication/notification of results:** All the candidates will be notified by e-mail, sent by the call holder, with the selection meeting minutes enclosed.

13. **Deadlines:** This call for applications is open from 19th August to 15th September .

14. **Application:** Applications should be sent via e-mail to antonio.amorim@sim.fc.ul.pt, by attaching the following documents:

- a. Curriculum vitae - **CV may be provided in PDF or through the [CIÊNCIAVITAE](#) system;**
- b. Certificate of completion of previous degree;
- c. Other documents considered relevant.

15. **Time limits for the appeal procedure:** In case of negative decision, the candidates have 10 business days, after the date of announcement of the results of the candidates evaluation, to pronounce their disagreement in accordance with the *Código do Procedimento Administrativo*. Appeals against the final decision may be submitted to the Administration Board of FCiências.ID (fciencias.id@fciencias-id.pt) within 15 business days after the notification date

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Note 1: The documents that prove the entitlement of the academic qualifications and diplomas, or the proof of registration in the academic degree or diploma requested on the call, can be dismissed during the application period and replaced by a declaration on their honour from the applicant. Their delivery is mandatory for the fellowship contractualization.

Note 2: Please note that - higher education degrees and diplomas awarded by foreign higher education institutions - need to be recognized by a Portuguese higher education institution, pursuant to the [Decree-Law nr. 66/2018](#) (August 16) and the [Ministerial Order nr. 33/2019](#) (January 25). The presentation of the recognition certificate is mandatory for contract signature. More information can be obtained at: <https://www.dges.gov.pt/en/pagina/degree-and-diploma-recognition>.