

ANNOUNCEMENT FOR THE AWARD OF A POST-DOCTORAL RESEARCH FELLOWSHIP

Title: Post-Doctoral research Fellowship; 1 vacancy

Reference: 15/ECUM/CMAT/2026 - IA-Olivais (BIPD)

A call for applications is now open for the attribution of 1 grant of Post-Doctoral research fellowship within the scope of the R&D project “Inteligência Artificial na Otimização da Rega para Olivais Resilientes às Alterações Climáticas” from the Centre of Mathematics of University of Minho, with reference PL24-00057, financed by the Promove program from Fundação “la Caixa” | BPI and the Portuguese Foundation for Science and Technology (FCT), under the following conditions:

Scientific Area: Mathematics

Recipient category: The BIPD are intended for doctorates in the area of Mathematics.

Admission Requirements:

- Hold a doctoral degree obtained within three years prior to the date of submission of the scholarship application;
- Not exceed, with the conclusion of the contract in question, including possible renewals, an accumulated period of three years in this type of scholarship, consecutive or interpolated;
- Not to have previously held a post-doctoral scholarship contract with the same I&D Unit. Once the BIPD contract has ended, no new scholarship contract can be signed between the same host organization and the same scholarship holder.

Candidates who do not cumulatively meet the requirements described will be excluded.

Applicants' eligibility:

Candidates who meet the conditions set out in Article 9 of the Research Grant Regulations, No. 950/2019, of 16-12-2019, of FCT I.P. are eligible.

Nationals or citizens of other European Union member states, third-country nationals, stateless persons, and citizens with political refugee status are eligible to apply for this competition.

Candidate eligibility requirements:

- a) The candidate must demonstrate in their CV solid competencies in the fields of Mathematical Modeling and Optimal Control.
- b) The candidate must have at least two articles published or accepted for publication in scientific journals indexed in the first quartile of the SCImago Journal Rank (SJR).

The journals in which these articles are published or accepted for publication must be indexed in the following scientific categories: Mathematics – Applied Mathematics; Mathematics – Modeling and Simulation; Mathematics – Control and Optimization; Computer Science – Computational Theory and Mathematics; Agricultural and Biological Sciences (miscellaneous).

The quartile classification of the journals to be considered is that of the most recent edition of each bibliographic database, regardless of the year in which the article was published.

Workplan and objectives to be achieved:

The objectives of this work plan are: (1) to identify and mathematically model the irrigation of an olive grove; (2) to formulate an optimal control problem; (3) to solve the problem numerically using Python.

1. Literature review.
2. Identification and mathematical modeling of the system dynamics, and theoretical study of stability.
3. Identification and mathematical modeling of constraints and formulation of an optimal control problem.
4. Implementation of the problem in Python and its numerical solution.
5. Writing of two scientific articles.

The BIPD are restricted in time in order to stimulate scientific employment and the use of researcher contracts as a rule for hiring them - according to n° 2, article 7° of the FCT I.P. Research Grants Regulation (2019).

Applicable legislation and regulations: Research Fellow Statute (EBI), approved by Law n°. 40/2004 of August 18, in its current wording and FCT Research Fellowship Regulation, approved by Regulation n° 950/2019, published in the Diário da República, 2nd series, of December 16, 2019, in its current wording, and Scientific Research Fellowship Regulation (RBIC) of the University of Minho, approved by order n° 4998/2025, published in the Diário da República, 2nd series, n° 81, of April 28, 2025 Amended and republished through amendment statement no. 634/2025/2, published in the Official Gazette, 2nd series, no. 132, of July 11.

Host/Contracting institution and scientific supervision:

The workplan will be carried out in the Centre of Mathematics of University of Minho, located in the Campus de Gualtar, 4710-057, Braga, under the scientific supervision of the Doctor Cecília Eduarda Coelho Machado da Cruz Martins, Contracted Post-Doctoral Researcher of the Professorship Computer Science in Mechanical Engineering, Helmut Schmidt University Hamburg; and Integrated Member of the Centre of Mathematics of University of Minho and coordination by the same.

Fellowship duration: The grant will take place for a period of 3 months, with a provisional starting date on the May of 2026. The fellowship grant may, eventually, be renewed up to the maximum limit allowed by the project and/or applicable.

Amount of the research grant: The amount of the grant corresponds to 1901,00 €/month, according to the table of FCT grants in the country (<https://www.fct.pt/wp-content/uploads/2026/03/Tabela-de-Valores-SMM->

[2026.pdf](#)) and the table of values of the Scientific Research Scholarships of the University of Minho, updated annually by decision of the Management Board.

Payment is made on the 23rd of each month, through bank transfer to the Bank Identification Number of the fellow identified in the contractualization process.

Other benefits: Reimbursement of Voluntary Social Insurance, if the candidate chooses to receive it, corresponding to the 1st step of the contribution base (for scholarships of 6 months or more) and Personal Accident Insurance.

Exclusivity regime: The grantee will perform the activities under exclusivity, as foreseen in article 5^o of the Research Fellow Statutes and applicable regulations.

Selection panel:

President: Cecília Eduarda Coelho Machado da Cruz Martins, Contracted Post-Doctoral Researcher of the Professorship Computer Science in Mechanical Engineering, Helmut Schmidt University Hamburg; and Integrated Member of the Centre of Mathematics of University of Minho;

First effective member: Maria Fernanda Pires da Costa, Associate Professor, Department of Mathematics, School of Sciences, University of Minho.

Second effective member: Susana Margarida Ferreira Sá Faria, Associate Professor, Department of Mathematics, School of Sciences, University of Minho.

First substitute member: Carolina Paula Baptista Ribeiro, Assistant Professor, Department of Mathematics, School of Sciences, University of Minho.

Second substitute member: Luís Jorge Lima Ferrás, Assistant Professor, Faculty of Engineering, University of Porto.

The first effective member will substitute the President of the selection panel in case of impediment, being nominated the first substitute member in the place of the first effective member.

Criteria and procedures for applications assessment and selection: The applications assessment will focus on the candidate's Merit, following evaluation criteria, valued on a scale of 0 to 5 values:

A. Applicant Merit - AM (80%):

A.1 - Personal curriculum (considering professional and scientific background), with a weighting of 70%;

A.2 - Current and relevant research in Mathematical Modeling and Optimal Control, and experience in the numerical solution of optimal control problems using Python, with a weighting of 30%.

The classification of the applicant's merit (AM) will be achieved through the following formula:

$$AM=(A1*0.7) +(A2*0.3)$$

Candidates ranked in the first 4 (four) positions, and who obtain a minimum classification of 4.0 in AM, will be admitted to the Interview phase, and the Jury will evaluate the following sub-criteria:

B. Interview – INT (20%):

B1: Demonstrated knowledge in the area in question (60%)

B2: Motivation (35%)

B3: Language skills (5%)

The Interview classification (**INT**) will be obtained by applying the following formula:

$$INT=(B1*0.6) + (B2*0.35) + (B3*0.05)$$

The final classification (CF) will be obtained by applying the following formula:

$$CF=(AM*0.8) + (INT*0.2)$$

Application deadline and submission: The call for applications is open for a period of 10 working days from the date of publication on the Euraxess portal.

Applications must be submitted by email to bolsas@ecum.uminho.pt, indicating the reference number of the competition in the subject line: **15/ECUM/CMAT/2026 - IA-Olivais (BIPD)**. Only applications submitted within the established deadline and accompanied by the following documents will be accepted:

- a) Candidate's updated curriculum vitae;
- b) Certificates of the academic degrees obtained or, if applicable, the candidate's declaration of honor that he/she has completed the degrees required in the notice by the application deadline (not applicable to research initiation grants).

For degrees obtained abroad, the record of recognition of the academic degrees and record of the conversion of the respective final classification to the Portuguese classification scale must be presented, or, alternatively, a declaration of honor from the candidate.

This declaration must attest to facts that occurred prior to the application. In the event of a discrepancy between the information contained in the declaration and the documentation submitted for the purposes of contracting the scholarship, only the information contained in the latter will be considered. If it is found that the documents proving the academic degree and diploma, or their recognition under the terms of Decree-Law n. ° 66/2018, of August 16, do not correspond to the classifications awarded in the assessment of the academic career and may consequently alter the candidate's ranking, the scholarship will not be contracted;

- c) All works mentioned in the curriculum vitae.

Form of publication/notification of results: The results of the evaluation are published in a single list (by final score obtained), posted in a visible and public place in the host unit, as well as by email to all candidates, attaching, for this purpose, the minutes of the jury's deliberations, within a maximum period of 90 working days from the deadline for submission of applications.

Candidates are informed, at a preliminary hearing, in accordance with Articles 121 and 122 of the Administrative Procedure Code, of the likely outcome of the final decision, and may comment within 10 working days of this notification.

An appeal may be lodged against the final decision within 15 working days, or an appeal may be lodged with the highest executive body of the funding entity within 30 days, both after the respective notification (Article 12(nº6) of the FCT Research Grant Regulations).

Within 10 working days of notification of the grant award, the applicant must declare their acceptance in writing. In case of non-acceptance, the next highest ranked applicant will be notified immediately.

Fellowship contractualization: The scholarship is awarded through the signing of a contract between the University of Minho and the scholarship recipient, in accordance with point 2.4 of the Rules for the Award and Management of Scholarships

https://www.fct.pt/wpcontent/uploads/2022/03/Normas_de_Atribuicao_de_Bolsas_2021.pdf and the draft contract in Annex II of the University of Minho's Scientific Research Scholarship Regulations.

The contract can only be signed after receipt of all the documentation required for the type of scholarship, which must occur within a maximum period of 6 months, including proof of academic degrees or diplomas, as well as enrollment in non-degree study cycles or courses, as applicable.

Once all the documentation has been received, the contracting entity has 60 working days to sign the scholarship contract. Once received by the scholarship holder, the contract must be returned, duly signed, within 15 working days.

Term and cancellation of fellowship contracts: Without prejudice to the other grounds laid down in the University of Minho's Regulations for Scientific Research Scholarships and in the Research Fellow Statute, the scholarship will cease on completion of the contracted work plan, as well as on expiry of the period for which it was granted or renewed.

The **final report** must be submitted to the scientific advisor, in accordance with the defined objectives and evaluation criteria, no later than 60 working days after the end of the scholarship and must be drawn up in accordance with Annex I of the Regulations of the University of Minho.

Non-discrimination and equal access policy: Universidade do Minho actively promotes a policy of non-discrimination and equal access, so that no candidate may be privileged, benefited, harmed or deprived of any right or exempt from any duty due, namely, to ancestry, age, sex, sexual orientation, marital status, family status, economic situation, education, social origin or condition, genetic heritage, reduced working capacity, disability, chronic illness, nationality, ethnic origin or race, territory of origin, language, religion, political or ideological convictions and trade union membership.

Declaration of Honor

Academic qualifications

I, (full name), candidate for the vacancy for the award of a (type of scholarship), within the scope of the project (name or reference of the project), published on the Euraxess portal, with the reference (ref. notice), declare on my honor that I have completed the academic degree of (academic degree), qualifying for the type of scholarship in the competition, namely the course (designation), by the (University conferring the degree), on the date XX/XX/XXXX, with a final average of XXXXX values on the YY scale.

As it is not possible for me to present proof of qualifications until the end of the competition, I declare that I undertake to present the aforementioned certificate at the moment of the scholarship contract, in the event that I am selected for the vacancy in the competition.

As this is true, I hereby date and sign this declaration.

(Place), (date).

(full name)

NOTE: The declaration may only attest to facts that occurred prior to the application.

In the event of a discrepancy between the information contained in the declaration and the documentation submitted for the purpose of contracting the scholarship, only the information contained in the latter will be taken into account.

Declaration of Honor

I, (full name), bearer of identification document number (XXXX), candidate for a research grant (type of grant), within the scope of the project (name or reference of the project), published on the Euraxess portal, with the reference (ref. call for proposals), declare on my honor that (I have not received any research grants to date / I have received the following research grants) under the Research Grant Holder Statute.

University	Funding Entity	Project	Type of Grant	Duration	Start	Term

As this is true, I hereby date and sign this declaration.

(Place), (date).

(full name)