



ANNOUNCEMENT FOR THE AWARD OF A RESEARCH FELLOWSHIP

Title: *(Research Fellowship for Bachelor's degree; 1 vacancy)*

Reference: ALG – ICATER – 2023 – Bolsa-4.3

A call for applications is now open for the attribution of one Research Fellowship for Bachelor's degree within the scope of the R&D project, Algoritmi Center, "I-CATER - Intelligent Robotic Coworker Assistant for Industrial Tasks with an Ergonomics Rationale", with the reference: PTDC/EEI-ROB/3488/2021, at the University of Minho, funded by national funds through the Foundation for Science and Technology, I.P. (FCT), under the following conditions:

Scientific Area: Engineering

Specific Scientific Area: Electronic and Computer Engineering – Specialization in Control, Automation and Robotics, or related areas.

Recipient category: Students enrolled in an integrated **master's/master's program or in a non-academic degree course** integrated in the institution's educational project, in the area requested in public notice or related area.

Requirement for granting the fellowship:

- The applicants may apply without prior registration in the course for which the fellowship is open. The requirement to enroll in a degree course or non-academic degree course will be verified on the date of contracting the fellowship;
- Only fellowships whose selected applicants present a valid proof of enrollment in a degree course or non-academic degree course will be contracted, according to the type of the fellowship, issued by the academic services of the Higher Education Institution, indicating, respectively, the academic year or its duration (star and term).
- Enrollment in non-certified courses (without curricular units) will not be considered as proof of enrollment.

Candidates profile:

- Candidates must have, at the date of application, a **bachelor degree** in Electronic and Computer Engineering or related areas, or related areas. Is required for contractualization, proof of academic qualifications completed at the deadline for applications, including those resulting from academic degree recognition processes.
- Candidates enrolled in non-conferring degree course: cannot benefit from this scholarship candidates who, with the conclusion of the scholarship contract in question, including renewals, exceed a cumulative period of two years, followed or interpolated, in this type of scholarship;



- Preferential Requirements:
 - a) Academic training in the area of specialization in Control, Automation and Robotics;
 - b) Experience in Neuronal Dynamic Systems – Neuronal Dynamic Fields;
 - c) Experience in Machine Learning methods, with focus on associative learning;
 - d) Experience in working with collaborative robots - programming by demonstration;
 - e) Be enrolled in the last year of an integrated master or master course;
 - f) Preferential factors: proven experience in developing neuronal dynamic models, implementing algorithms for learning by demonstration, and hands-on work experience with the Sawyer Collaborative robot.

Applicants eligibility: Applicants must comply with the eligibility conditions laid down in article 9 of the Research Grants Regulation of the Portuguese Foundation for Science and Technology (2019).

Workplan and objectives to be achieved:

Within the scope of the I-CATER project (project funded by FCT, ref. PTDC/EEI-ROB/3488/2021) a distributed and flexible system will be developed for flexible decision-making in human-robot collaborative tasks. In this sense, the objective is to endow the collaborative robot with cognitive functions, such as memory, prediction, memory, inference of intention, learning, decision making, which will be implemented using dynamic neural fields and associative learning rules.

Note: The work plan is suitable for consolidating the scholarship holder's scientific training within the scope of the degree-conferring course, and framed in the development of a master's thesis. The tasks to be performed are:

Task 1- Implementation of Dynamic Neuronal Field (DNFs) Algorithms to generate cognitive functions of memory and decision making;

Task 2 – Implementation of the various layers of the decision model: Object Location Memory (OML), Task Knowledge Representation (STKL), Action Simulation (ASL), Intention Detection (IL), Action Selection to be performed by the robot (AEL);

Task 3 – Validation of the decision model in construction tasks involving human-robot collaboration;

Task 4 – Documentation of the work carried out and respective results (report and videos).

Applicable legislation and regulations: Research Fellowship Holder Statutes, approved by Law no. 40/2004 of August 18, in its current version published by Decree-Law no. 123/2019 of August 28; Regulation of Scientific Research Fellowships of the University of Minho (RBIC), published in “Diário da República”, 2nd serie, no. 119, through dispatch no. 6524/2020 of 22-06-2020, ratified by ratification declaration no. 447/2021 of 22-06-2021 and Regulation of Research Studentships and Fellowships (RBI) of the Foundation for Science and Technology, I.P. - in force.



Host/Contracting institution and scientific supervision: The workplan will be carried out in the Algoritmi Center, School of Engineering of University of Minho, located in the Azurém Campus, Guimarães, under the scientific supervision of Estela Guerreiro Silva Bicho Erlhagen, Full Professor at the Department of Industrial Electronics at the School of Engineering at the University of Minho.

Fellowship duration: The grant will take place for a period of **6 months**, with a provisional starting date in **August of 2023**. The scholarship may eventually be renewable, up to 2 years, in the case of a student enrolled in a master's program. For students enrolled in a non-degree-granting course, the scholarship is renewable for up to one year. Under no circumstances may it exceed the maximum period allowed by the project and/or provided for in the legislation and regulations in force.

Amount of the research grant: The value stipend (Monthly Maintenance Allowance) is **930,98 euros per month**, in accordance with the stipends values published by the Foundation for Science and Technology (FCT I.P.) in the country (Annex I – Monthly Stipends Values for the maintenance allowances of the [FCT Regulation for Research Studentships and Fellowships](#)) and Annex II of the Regulation of Scientific Research Fellowships of the University of Minho (RBIC), published in “Diário da República”, 2nd serie, no. 119, through dispatch no. 6524/2020 of 22-06-2020, ratified by ratification declaration no. 447/2021 of 22-06-2021, according to the applicable regulation. Payment is made on the 23st 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 Security (Social Security contributions), corresponding to the 1st level of discounts (*for research grants with a total duration 6 months or higher*) and personal accident insurance.

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

Selection panel: The selection panel has the following composition:

President: Estela Guerreiro da Silva Bicho Erlhagen, Full Professor at the Department of Industrial Electronics at the School of Engineering at the University of Minho.

Effective Members: Sérgio Paulo Carvalho Monteiro, Assistant Professor at the Department of Industrial Electronics at the School of Engineering at the University of Minho and Ana Sofia Pinho Colim, Guest Professor equivalent to Assistant Professor at the Department of Production and Systems at the School of Engineering at the University of Minho.

Alternate Members: Luís Louro Junior Researcher at Centro Algoritmi, School of Engineering at the University of Minho; and Wolfram Erlhagen from the Mathematics Department, School of Sciences, University of Minho.



The first effective member will substitute the President of the selection panel in case of impediment, being nominate 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 1 to 5 values:

Applicant Merit - AM (100%):

A.1: Academic path (considering the classifications of academic degrees), with a weighting of 50%;

A.2: Personal curriculum (considering professional and scientific background), with a weighting of 40%

A.3: Motivation letter, with a weighting of 10%.

The final classification of the applicant's merit with the achieved through the following formula:

$$MC=(A1*0,5)+(A2*0,4)+(A3*0,1)$$

Reference table for defining the score for Sub-criterion A1 - Academic track record.

Bachelor's + Master's (pre or post Bologna) Integrated Master (300-360 credits)		Bachelor's Degree - 180 credits (pre or post Bologna)		Master's (90-120 credits) (Pre or post-Bologna)	
Classification	A1 score	Classification	A1 score	Classification	A1 score
≥ 18	5,0	≥ 17	3,5	≥ 17	3,0
17	4,5	16	3,0	16	2,5
16	4,0	15	2,5	15	2,0
15	3,5	14	2,0	14	1,5
14	3,0	< 14	1,5	< 14	1,0
< 14	2,5				

If the selection panel does not feel able to decide using the method under MC, it may choose to conduct an Interview. In that case, MC will have a weighting of 70% and the candidates classified in the first two positions, that obtained a minimal classification of 3.5 in MC, will be admitted to the Interview phase, in which the Jury will evaluate the following sub-criteria:

B. Interview – ENT (30%):

B1. Interpersonal skills(30%).

B2. Demonstrated knowledge in the area of the competition(40%).

B3. Motivation (20%)

B4. Language skills (10%).

The final classification of the Interview is achieved through the following formula:

$$ENT=(B1*0,3) + (B2*0,4) + (B3*0,2) + (B4*0,1)$$



The final classification (CF) of the Candidate Merit (MC) and Interview (ENT) will be obtained by applying the following formula:

$$CF = (AM*0,7) + (ENT*0,3)$$

If none of the candidates demonstrate to have a suitable profile for the execution of the work plan, the Jury is entitled to close this call without selecting a candidate.

The academic degrees and diplomas documents, or their respective recognition when awarded by foreign higher education institutions are not mandatory in the application phase, being replaced by a declaration of honor of the candidate with the contents of academic results. The documents of academic qualification or respective recognition will be required in the contracting phase and must attest facts that occurred on a date prior to the application. In situations of divergence between the information contained in the declaration and the documentation submitted for contracting the grant, only the information contained in the latter will be considered. If the documents proving the ownership of the academic degree and diploma, or the respective recognition under the terms of Decree-Law No. 66/2018, of August 16, do not correspond to the classifications awarded in the evaluation of the academic path, which can change the candidate's ranking, the fellowship won't be contracted.

Notes: Applicants with degrees obtained abroad must present proof of recognition of qualifications in Portugal and conversion of the final classification obtained in them to the Portuguese classification scale or declaration under the terms indicated in the previous point. Candidates who do not comply with one of these provisions, the selection panel will assign "0" in the grade of the graduation and/or master course. Candidates will be evaluated on the remaining parameters.

Disclosure of results: The provisional results of applications, based in the selection panel minutes, will be send to the applicants by email until 90 working days from the applications deadline.

If case of unfavourable results, the candidates have a period of 10 working days to comment, if desired, in a prior hearing to interested parties, pursuant to articles 121 and 122 of the Code of Administrative Procedure (DL no. 4 / 2015 of January 7th).

[The hearing of the interested parties, if excluded, should be justified accordingly with article 124° of CPA]



Complaint and appeal procedures: The final results of the evaluation will be published through an ordered list (*alphabetically, by final grade obtained*), posted in a visible and public place of the host unit, as well as by email to all applicants, enclosing for that purpose, the minutes of the jury deliberations.

The selected candidate must inform its willingness to accept the grant, in writing. In case of rejection, the fellowship will be awarded to the next candidate in the ordered list of applicants.

Interested parties may also appeal against the final decision, pursuant to paragraph 3 of Article 13 of the Regulation of Research Fellowships of the University of Minho in its current wording | paragraph 6 of Article 12 of the Regulation of Research Fellowships of the FCT in its current wording.

Constitution of a selection reserve list: The applicants ranked in the next positions on the ordered list will be included in a selection reserve list, which can be used until 31/12/2023.

Application deadline and submission: The call for applications is open from **06/06/2023 till 20/06/2023**.

Applications must be formalized by sending an application letter with the following documents: curriculum vitae; qualifications certificate or declaration of the applicant; motivation letter; statement proving that meets the conditions for the grant typology, according to the application requirements; other documents important to the evaluation process.

Applications must be sent by email to recrutamento@algoritmi.uminho.pt, indicating the reference of the call for applications in Subject. Applications submitted by other means will not be accepted.

Fellowship contractualization: The fellowship will be attributed by signing a fellowship contract between the University of Minho and the fellow, accordingly with the contract minute (annex IV of the Regulation of Research Fellowships of the University of Minho (RBIC), published in *Diário da República, 2nd Série, no. 119*, through dispatch no. 6524/2020 of 22-06-2020, ratified by ratification declaration no. 447/2021 of 22-06-2021, as indicated in 2.4 of the FCT document: "[Rules for Granting and Management of Grants within the scope of R&D projects, including infrastructure projects, the multi-annual financing program for R&D units and other FCT financing instruments \(Version 2021\)](#)".

The contract may only be concluded after all the documentation required is collected, which must take place within a maximum period of 6 months [including evidences of the academic degrees or diplomas and enrolment in degree courses or non-conferring courses, depending on the type of scholarship].

Once all the documentation has been received, the contracting entity has a period of 60 working days to conclude the scholarship contract. Once received, the fellow must return the contract duly signed within 15 working days.

The activities under the fellowship contract can only began after proper authorization by the contracting entity.



Term and cancellation of fellowship contracts: Without prejudice to the other causes provided the fellowship regulations (FCT and UMinho) and in the Statute of the Research Fellow, the fellowship ends with the completion of the work plan, as well as with the expiration date for which it was granted or renewed.

At the end of the fellowship, the grantee is obliged to present a Final Report of the work carried out, in accordance with the objectives and evaluation criteria defined with the scientific advisor, within 30 days after the end of the scholarship.

The **final report** must be prepared in accordance with Annex I of the Scientific Research Fellowships Regulation of the University of Minho (RBIC), published in *Diário da República, 2nd Série, no. 119*, through dispatch no. 6524/2020 of 22-06-2020, ratified by ratification declaration no. 447/2021 of 22-06-2021.



ANNEX:



Declaration of Honor
Academic habilitations

(name), applicant to the research fellowship vacancy under the I&D project (title or reference), published in the Euraxess portal, reference xxx, hereby declares to have a degree on **XXXX (name of the course)**, concluded in the **University of XXXX**, on the **XX/XX/XXXX**, with the final grade of XX.

I have submit my diploma for recognition in the **University of XXXX**, according to the Decree-Law n° 66/2018 of August 16th, concluded In the **XX/XX/XXXX**, with the final grade of XX.

I further declare that I undertake to present proof of my diploma recognition obtained under the Portuguese Law, until the date of the conclusion of the fellowship contract, in case of being selected for the vacancy in this competition.

As this is true, this declaration will be dated and signed by me.

(Place), (date).

(name)



Declaration of Honor
Requirements Grant Typology

(name), applicant to the research fellowship vacancy under the I&D project (title or reference), published in the Euraxess portal, reference **(fellowship Reference)**, hereby declares that complies with the conditions for the type of scholarship of the referred call, reference above, in accordance with the application requirements, legislation and regulations indicated in the notice.

As this is true, this declaration will be dated and signed by me.

(Place), (date).
