

ANNOUNCEMENT FOR THE AWARD OF A RESEARCH GRANTS FOR APPLIED ARTIFICIAL INTELLIGENCE LABORATORY (2AI)

Title: Announcement for one (1) Research Grant - PhD Research Scholarships

Reference: AM2R-PPS8x-IPCA-EST-2AI-PhD-2

Number of positions: 1

Project: SmartStream - AM2R - PPS (8.2, 8.3, 8.4)

The Laboratory of Applied Artificial Intelligence (2Ai), a R&D unit of the School of Technology (EST) of the Polytechnic Institute of Cávado and Ave (IPCA), open a call for one (1) Research Scholarships (BI - PhD Students), within the scope of Mobilising Agenda for Business Innovation in the Two-Wheeler Sector (AM2R) (Notice No 02/C05-i01/2022, Agendas/Alliances (.01) Mobilising for Reindustrialisation and (. 02) Green for Business Innovation) under and by co-financing the "Mobilising Agendas for Business Innovation" of the "Next Generation EU" programme of Component 5 of the Recovery and Resilience Plan (RRP), concerning "Capitalisation and Business Innovation", under the Incentive Scheme Regulation "Agendas for Business Innovation".

Scientific Area: Electrical Engineering, Eletronic Engineering, Informatic Engineering or similar areas.

Admission Requirements:

- Master in the areas of Electrical Engineering, Eletronic Engineering, Informatic Engineering or in areas considered to be related, and enrolled in doctoral programmes at the Technological University of Shannon (TUS).

Eligibility of candidates:

- The following are eligible for the award of scholarships financed directly or indirectly by the IPCA:
 - a. National citizens or citizens of other member states of the European Union;
 - b. Third-country citizens;
 - c. Stateless candidate;
 - d. Beneficiaries of political refugee status.
- For scholarships whose work plan runs, in whole or in part, in foreign institutions, only candidates who prove that they are permanently and habitually resident in Portugal are eligible on the date of the start of the scholarship.

Work plan:

- This project is part of the Mobilising Agenda for Business Innovation in the Two-Wheeler Sector (AM2R) and aims to develop robotic systems with reinforcement learning to support industrial digitalisation in tasks of moving goods/people between stations with perception and adaptation to multi-surface conditions.

Objectives of the work plan:

- This project is part of the Mobilising Agenda for Business Innovation in the Two-Wheeler Sector (AM2R) and aims to develop robotic systems with reinforcement learning to support industrial digitalisation in tasks of moving goods/people between stations with perception and adaptation to multi-surface conditions.
- The candidate will be expected to develop and validate mobile robotic platforms in real shop floor environments and scenarios. The project will focus on the development and implementation of mobile robotic navigation solutions with a reinforcement learning (RL) approach to improve motion planning with multiple systems in cooperation for mapping operations and manipulation of goods/objects/people. In this sense, the perception of the surface type is essential to effectively improve the movement through active knowledge of the environment and the type of assets.

These methods/technologies should lead to at least 3 international papers and/or 1 patent. In addition, the outcome of this work plan should be translated into the writing of a PhD thesis.

Applicable legislation and regulations:

- The Research Fellowship Statute, approved by Law No. 40/2004 of 18 August, in the current wording published by Decree-Law No. 123/2019 of 28 August; Regulation of Research Grants of the Polytechnic Institute of Cávado and Ave, Regulation No. 821/2020 (Diário da República No. 191/2020, Series II of 2020-09-30).

R&D unit and supervision:

- The Work Plan will be developed in the Laboratory of Applied Artificial Intelligence (2Ai), R&D unit of the School of Technology of the Polytechnic Institute of Cávado and Ave, under the scientific guidance of Professor Doctor António Moreira and Professor Doctor João Borges Silva and by Professor Doctor John Cosgrove, of the Technological University of the Shannon (TUS) .

Scholarship duration:

- The grant will have a duration of 1 (one) year, starting in setembro 2023, possibly renewable, after a positive evaluation and not exceeding the maximum duration of the project, which is expected to end on 31/12/2025 and the maximum duration of the grant (4 years: students enrolled in a PhD).

Monthly maintenance allowance: the amount of the grant corresponds to a monthly maintenance allowance of € 1 199,64, according to the table of values of grants awarded directly by FCT (https://www.fct.pt/wp-content/uploads/2023/02/Tabela-de-Valores-SMM_2023.pdf), and according to the table in Annex III of the Regulations for Research Grants of the Polytechnic Institute of Cávado and Ave, according to the update authorized for the year 2023. This amount will be paid monthly by bank transfer.

Other benefits:

- Reimbursement of Voluntary Social Insurance, corresponding to the 1st step of the contributory base, and Personal Accident Insurance.
- Scholarship holders may also apply for an allowance for complementary training activities for a maximum period of six months in the total duration of the grant (including renewals), with the payment of a single travel allowance, to be granted upon a positive opinion from the supervisor, under the terms of the table attached to the present regulations (Annex III of the IPCA research grants regulations).
- Travel allowance, if justified, in the amount pre-established in the table attached to the present Regulation (Annex III of the IPCA's Research Grants Regulations);
- Installation subsidy for stays equal or longer than six consecutive months, of a pre-established value, according to the table attached to the present regulation (Annex III of the IPCA's Research Grants Regulations);
- The Scholarship holders may receive a one-off subsidy for participation in scientific meetings or missions, according to the table attached to the present regulation (Annex III of the IPCA's regulation of research grants);
- Scholarship holders must annually submit a report on the development of their PhD to the coordinator and scientific supervisor of the Project.

Members of the Jury:

President:

- Professor Doctor António Herculano de Jesus Moreira, Adjunct Professor of Higher Technical Professional School of the Polytechnic Institute of Cávado e Ave and responsible for the project.

Effective Members:

- Professor Doctor João Luis Araújo Martins Vilaça, Coordinator Professor of the School of Technology of the Polytechnic Institute of Cávado e Ave and Coordinator of 2Ai.
- Professor Doctor João Borges Silva, Adjunct Professor of Higher Technical Professional School of the Polytechnic Institute of Cávado e Ave.

Substitute members:

- Professor Doctor John Cosgrove of the Technological University of the Shannon.
- Professor Doctor José Henrique de Araújo Silveira de Brito, Coordinator Professor of the School of the School of Technology of the Polytechnic Institute of Cávado e Ave.

Evaluation and selection criteria and procedures:

the evaluation of the applications will focus on the candidate's merit, applying the following evaluation criteria, valued on a scale of 0 to 20:

Merit of the candidate - MC (100%):

Applications considered admissible will be scored on a scale of 0 to 20 in each of the following evaluation factors:

Factor A – Curricular evaluation (AC), with a weight of 50%;

Subfactor A1 - Classification obtained in the master's degree plus a degree, weighing 50%;

Subfactor A2 - Related scientific and / or professional experience, weighing 50%;

Factor B - Interview (Ent), weighting 45%:

Subfactor B1 - Motivation and interest in the place, with a weight of 20%;

Subfactor B2 - Capacity for expression, argumentation and verbal fluency, weighing 20%;

Subfactor B3 - Posture and experience of team work, weighing 20%;

Subfactor B4 - Compatibility with the work plan profile, weighing 20%;

Subfactor B5 - Proven command of the English language, weighing 20%;

Factor C - Motivation Letter (CM), weighting 5%:

The interview has a maximum duration of 30 minutes.

For the purposes of deciding on the award of scholarships, applicants will be ranked according to the weighted average of the classification obtained in each of the three factors, translated by the following formula:

$$\text{Final Classification (CF)} = (A \times 0.5) + (B \times 0.45) + (C \times 0.05)$$

For tie-breaking purposes, the ranking of candidates will be performed based on the ratings assigned to each of the evaluation criteria in the following order of precedence: factor A followed by factor B and factor C. Next, the following order of precedence for the sub-criteria, namely: A1, A2, B4, B5, B1, B3, B2, C. As a last resort, it will be the responsibility of the jury president to untie the candidates.

Ranking of candidates:

- The classification of each candidate is obtained by the average of the ratings of each of the elements of the Jury.
- In the event of a tie, the decision of the tiebreaker will rest with the President of the Selection Jury. Based on the CF, the candidate in the first position will be selected for the award of this scholarship. In the event of non-acceptance of the vacancy by one of the serial candidates, the members of the Jury reserve the right to contact the serial candidates in the following positions, in order of ranking, for the award of this scholarship.

Publication of results:

- The assessment results project, at each stage, duly substantiated in the minutes, will be sent to candidates by email, within 60 working days after the deadline for submission of applications. If the result is unfavorable to the granting of the requested scholarship, candidates have a period of 10 working days to comment, if they wish, in the context of a prior hearing with interested parties, under the terms of article 121 and 122 of the Administrative Procedure Code (DL nº 4 / 2015 of January 7).

Candidates participation and decision:

- The Final Ordering List Project is notified to candidates, by email with receipt of delivery of the notification, to comment for the purpose of holding the hearing of interested parties, under the terms of article 121 and following of the Administrative Procedure Code to email candidatura_2ai_est@ipca.pt. In the absence of allegations by the candidates, the final ordering project is considered automatically approved.

Submission of applications:

- The tender is open 10 working days after publication on the website <https://euraxess.ec.europa.eu>.

Applications and supporting documents for the application provided for in this Notice must be submitted by email to candidatura_2ai_est@ipca.pt. In the subject of the e-mail it is mandatory to put the reference AM2R-PPS8x-IPCA-EST-2AI-PhD-2 of the scholarship to which you are applying. If the scholarship reference is not indicated in the subject of the e-mail, the candidate will be automatically excluded from the procedure.

When submitting the application, the candidate must formally formalize by sending (via email) the following documents in PDF format:

- Certificates of qualification of the academic degree of Bachelor and Master, specifying mandatorily the final classification*;
- Curriculum vitae (<https://cienciavitae.pt/>);
- Letter of motivation.
- At least 1 letter of recommendation.
- Document proving enrollment in the current academic year - PhD (if applicable) **;
- Proof of grades obtained in the course units in which the student is enrolled (if applicable).

* The presentation of the certificate of qualification of the academic degree of Bachelor and Master, when it has been awarded by foreign higher education institutions, can be dispensed in the application/submission phase, being replaced by the candidate's declaration of honor, being obligatory the presentation of the document of recognition of foreign degree and diploma in the process of contracting the scholarship. In situations of divergence between the information contained in the declaration and the documentation delivered for the purpose of contracting the scholarship, only the information contained in the latter will be considered. If it is found that 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 16 August, do not correspond to the classifications attributed in the evaluation of the academic path and may, consequently, changing the candidate's ranking, the scholarship will not be contracted.

** Only at the time of contracting is it mandatory to present the document proving enrollment in the

PhD Programmes of the Technological University of Shannon (TUS). At the time of submission of the application, the candidate must attach a statement of honour that he/she meets the requirements for enrolment for a doctoral degree, if he/she does not yet have the respective proof.

- The application and all associated documents, including letters of motivation and recommendation, must be written in Portuguese or in English. The absence of any mandatory document, required when submitting the application, is a reason for exclusion from this contest. And, applications sent by other means will not be admitted.
- It is mandatory for the candidate to present his / her application by the submission deadline set in this announcement. The submission of the application after the deadline set in this announcement is a reason for not being eligible for this call.
- The Selection Jury has the power to require any candidate, in case of doubt, to present supporting documents for their statements.
- False statements made by candidates will be punished under the law.
- If the candidate is not a Portuguese citizen, he/she must provide documentary evidence, at the time of signing the grant contract, that he/she holds an authorization to legally remain in Portuguese territory and that entitles him/her to enter into the contract arising from the grant award.

Complaint:

- Complaints from the final ordering list, duly ratified, may be made to the IPCA president, to be submitted within 15 working days from the notification, to the email candidatura_2ai_est@ipca.pt, which does not have a suspensive effect.

Non-discrimination and equal access policy:

- The IPCA actively promotes a policy of non-discrimination and equal access, so that no candidate can be privileged, benefited, harmed or deprived any right or exemption from any duty due, in particular, to ancestry, age, sex, sexual orientation, marital status, family status, economic status, origin or social status, genetic heritage, reduced work capacity, disability, illness chronicle, nationality, ethnic or race origin, territory of origin, language, religion, political or ideological convictions and union membership.

Barcelos, 17 de agosto de 2023

A Presidente do Instituto Politécnico do Cávado e do Ave

Professora Doutora Maria José Fernandes

ANEXO I

Modelos

Modelo do Relatório Final de Apreciação do Programa de Bolsa a elaborar pelo Bolseiro

Identificação do bolseiro:

Identificação da bolsa, do projeto e entidade de acolhimento:

Orientador científico da bolsa:

1. Objeto e objetivos da bolsa

[De acordo com o tipo de bolsa, anúncio e plano de atividades]

2. Trabalhos desenvolvidos

[Apresentação cronológica das atividades desenvolvidas, incluindo listagem das publicações e trabalhos elaborados no âmbito do contrato de bolsa com os respetivos endereços URL, bem como cópia do respetivo trabalho final, no caso de bolsa concedida para obtenção de grau ou diploma académico].

3. Resultados

[Descrição sucinta dos resultados alcançados e eventuais desvios]

4. Apresentação dos resultados alcançados

5. Autoavaliação e avaliação do programa de bolsa

[Análise crítica do trabalho desenvolvido, conhecimentos adquiridos e avaliação geral – positiva ou negativa – do desempenho e do programa de bolsa]

Nota: Anexos a apresentar em formato eletrónico: Publicações e Trabalhos elaborados no âmbito do Contrato de Bolsa e cópia do Trabalho Final apresentado, no caso de Bolsa concedida para a obtenção de grau ou diploma académico. Em caso de bolsa de participação em reuniões científicas anexar comprovativo de presença na reunião.

Barcelos, ___ de _____ de 20__

O Bolseiro de Investigação, _____ (nome completo)

Modelo de Relatório Final de Avaliação da Atividade do Bolseiro de Investigação Científica a elaborar pelo Orientador Científico

Orientador científico da bolsa:

Identificação da bolsa, do projeto e entidade de acolhimento:

Bolseiro:

1. Análise crítica das atividades e do trabalho desenvolvidos pelo bolseiro

[Breve descrição das atividades desenvolvidas pelo bolseiro, de acordo com o anúncio e o plano de atividades e apreciação crítica dos objetivos e resultados atingidos pelo bolseiro.]

2. Avaliação final do trabalho desenvolvido pelo bolseiro

[Apreciação global fundamentada do trabalho desenvolvido pelo bolseiro, com balanço final positivo ou negativo, abordando o seu desempenho, esforço e dedicação]

Barcelos, ___ de _____ de 20__

O Orientador Científico da Bolsa, _____ (nome completo)

ANEXO II

Contrato de Bolsa de Investigação

ENTRE:

PRIMEIRO: INSTITUTO POLITÉCNICO DO CÁVADO E DO AVE, pessoa coletiva número 503 494 933, com sede na avenida Professor Doutor João Carvalho, Campus do IPCA, 4750-810 Barcelos, representado neste ato pelo sua Presidente, ____, adiante designado por **Primeiro Outorgante**

e

SEGUNDO: ____, de nacionalidade __, nascido a __-__-____, portador do ____ (Cartão de Cidadão/Bilhete de Identidade/Passaporte/Outro) n.o _____, válido até __-__-____, contribuinte fiscal n.º _____, residente na ____, adiante designado por **Segundo Outorgante**,

É celebrado de boa-fé e reciprocamente aceite o presente contrato de **bolsa** de investigação ao abrigo do Estatuto do Bolseiro de Investigação, aprovado pela Lei n.º 40/2004, de 18 de agosto, na sua redação atual, e do Regulamento de Bolsas de Investigação do IPCA, que se rege pelas cláusulas seguintes:

CLÁUSULA 1.ª – O **Primeiro Outorgante** compromete-se a conceder ao **Segundo Outorgante** uma bolsa de ____ (indicar e caracterizar o tipo de bolsa e sua referência) no âmbito do projeto “ ____ ” (indicar a referência e o título do projeto em que se insere, se for o caso) financiada por _____, pelo período de ____ (indicar meses ou dias, consoante o caso), ____ (eventualmente renovável OU não renovável), com início em __-__-____.

CLÁUSULA 2.ª – 1. O **Segundo Outorgante** obriga-se a desenvolver os trabalhos constantes do plano de atividades anexo ao presente contrato de bolsa, cujo conteúdo declara ter tomado conhecimento integral e aceitar sem reservas a partir da data de início do presente contrato.

2. O desempenho de funções pelo **Segundo Outorgante** a título de bolseiro é efetuado em regime de dedicação exclusiva nos termos previstos no artigo 5.o do Estatuto do Bolseiro de Investigação.

3. O **Segundo Outorgante** realiza os trabalhos no _____, sito em __, que funciona como entidade de acolhimento, tendo como Orientador Científico ____ (nome e instituição).

CLÁUSULA 3.ª - Ao **Segundo Outorgante** são reconhecidos os direitos previstos na lei, de acordo com a sua situação, nomeadamente nos artigos 9.º a 11.º do Estatuto do Bolseiro de Investigação, no(s) regulamento(s) aplicável(eis) e no presente contrato.

CLÁUSULA 4.ª - O **Segundo Outorgante** obriga-se a cumprir os deveres, aplicáveis à sua situação, previstos na lei, nomeadamente no artigo 12.º do Estatuto do Bolseiro e Investigação, no(s) regulamento(s) aplicável(eis) e no presente contrato.

CLÁUSULA 5.ª– 1. O montante do subsídio mensal de manutenção é de € __, __, (__), a liquidar mensalmente, através de cheque ou transferência bancária.

2. O **Segundo Outorgante** beneficia também de um seguro de acidentes pessoais durante o período de concessão da bolsa, de cujas condições declara ter tomado conhecimento e aceitar sem reservas.

2. Acrescem ainda as seguintes componentes de bolsa _____ (indicar se aplicável).

CLÁUSULA 6.ª – 1. O presente contrato não gera qualquer relação de natureza jurídico-laboral nem de prestação de serviços, não adquirindo o bolseiro a qualidade de trabalhador em funções públicas. 2. Não são devidos subsídios de alimentação, natal, férias ou quaisquer outros não previstos no Estatuto do Bolsheiro de Investigação, no(s) regulamento(s) aplicável(eis) e no presente contrato.

CLÁUSULA 7.ª – 1. Ao presente contrato aplica-se o Estatuto do Bolsheiro de Investigação e o Regulamento Bolsas de Investigação do IPCA, do qual o bolseiro declara ter tomado conhecimento. 2. Os casos omissos serão decididos pelo Presidente do IPCA, ouvido o Orientador científico.

CLÁUSULA 8.ª – São causas de cessação do contrato as previstas no Estatuto do Bolsheiro de Investigação e no Regulamento Bolsas de Investigação do IPCA

As partes declaram estar de acordo com o clausulado neste contrato, que é feito em duplicado, ambas as vias valendo como originais, ficando um exemplar na posse de cada um dos Outorgantes.

Barcelos, __ de _____ de _____.

O Primeiro Outorgante,

O Segundo Outorgante,

