

ANNOUNCEMENT FOR THE OPENING OF AN INTERNATIONAL SELECTION TENDER
PROCEDURE FOR THE HIRING OF 1 (ONE) DOCTORATE WITHIN THE R&D UNIT APPLIED
ARTIFICIAL INTELLIGENCE LABORATORY (2AI), with REFERENCE UIDP/05549/2020

1. Doctor Maria José da Silva Fernandes, Professor and President of Polytechnic Institute of Cávado and Ave (IPCA), in the use of own competence pursuant to paragraph d) of paragraph 1 of article 92 of Law 62/2007, of September 10, and paragraph g) of paragraph 2 of article 38 of the IPCA Statutes approved by Normative Order No. 1-A / 2019, published in the 2nd series of the daily of the republic of June 14, makes it known that, for a period of twenty business days from the business day immediately after the date on which this announcement is publicized, an international selection tender is open for recruitment in the form of an uncertain term contract concluded under the Labour Code, of 1 (one) doctorate with the category of Auxiliar Researcher position for the exercise of scientific research activities in the scientific area of Engineering, Artificial Intelligence and Biomedical Sciences in the I&D unit Applied Artificial Intelligence Laboratory 2Ai, under the programmatic program funding agreement for R&D units 2020-2023 (R&D Units evaluation process 2017/2018) concluded between the Foundation for Science and Technology, I.P. (FCT) and IPCA with reference UIDP/05549/2020, with financial support from FCT/MCTES through national funds (PIDDAC). The contracted researcher will be part of the 2Ai research team and will be involved in the development of its strategic program (2020-2023), namely in carrying out research tasks in the area of artificial intelligence applied to health, industry and environment and safety.
2. **Applicable Legislation:** This tender shall be governed by the Decree No. 57/2016, of 29th of August, amended by Law No. 57/2017 of 19 July, which approved a regime of hiring of doctorates to stimulate scientific and technological employment in all areas of knowledge (RJEC), by Labour Code, approved Law no. 7/2009, of February 12, under its current version and other applicable laws and regulations.
The doctorate will be hired under an employment contract with an uncertain term contract, under the terms of point b) of paragraph 1 of article 6 of RJEC, ex vi, paragraph 2 of article 18 of RJEC, for the period of 36 months, possibly renewable for periods of 12 months up to a maximum of 24 months, subject to the existence of funding, for the execution of the above-indicated activities, defined and non-lasting service, for the duration of the duties to be performed in the project identified above.
The opening of this competition was authorized by Order No. 44 / 2020, of the President of IPCA, 6 th May 2020, by proposal of the Director of the School of Technology (EST) and the Coordinator of the Research Center 2Ai, the existence of opinions from Scientific Councils, the confirmation of the existence of adequate budgetary appropriateness and that the job now open is foreseen in the IPCA staff chart there characterized by the category.
3. **Place of Work:** The workplace is located at 2Ai - Applied Artificial Intelligence Laboratory, IPCA School of Technology (EST), Barcelos Campus, Barcelos and/or other locations required for the development of research activities.

4. **Monthly salary:** The monthly base remuneration is 3.191,82 euros gross, corresponds to the 195th level of the Auxiliar Researcher category in the table of the Scientific Research Career Statute.
5. **Functions Regime:** The researcher to be hired will perform his duties on an exclusive dedication basis, implying the waiver of any paid public or private function or activity, including the exercise of a liberal profession.
The hired researcher may provide teaching service only at the IPCA.
Inventions, patents, designs and models, made or created, in whole or in part, by the researcher in the performance of his public activity are the exclusive property of the institution in which he works, without prejudice to the right to be considered as an inventor in the registration with NIIP (National Institute of Intellectual Property).
6. **Eligibility Criteria:** Any national, foreign and stateless candidate(s) who hold a doctoral degree in Biomedical Engineering, Electronic Engineering, Informatic Engineering or related scientific areas and holders of a scientific and professional whose profile is suitable with the indicated above can submit their application.
 - 6.1. General admission requirements are those defined in point 6.
 - 6.2. Requests: For the purpose of determining the profile appropriate to the activity to be developed, the following requirements are:
 - a) Experience in artificial intelligence, namely in the development of biomedical applications, image processing, three-dimensional information processing, robotics, medical information analysis and interpretation of results.
 - b) Experience in the production of scientific articles, research projects and patents.
 - c) Proof of English language knowledge (with official certificate, minimum level: C1).
7. **Formalization of the applications:** The applications are formalized through an application addressed to the President of the IPCA, according to the attached model, with identification of this announcement, full name, affiliation, ID and Citizen Card number or date or civil identification number, tax identification number, date and place of birth, marital status, profession, residence and contact address, including email address and phone contact.
 - 7.1. The application shall be accompanied by documents proving the conditions laid down in points 6, 6.1 and 6.2, namely:
 - a) Copy of certificate or degree diploma. If the doctorate has been awarded by a foreign higher education institution, it must be recognized in Portugal, under the terms provided for in the applicable law, under penalty of exclusion.
 - b) Detailed curriculum vitae structured according to the items in point 11;
 - i. The curriculum vitae shall contain all relevant information for the evaluation of the application taking into consideration the criteria of ordering and selection contained in this notice, and it must be organized according to the evaluation parameters detailed in point 11.

- ii. The curriculum vitae shall also state, explicitly and objectively, the number of citations.
 - iii. The publications indicated in the curriculum and the explanation of the method used for counting it must contain detail to enable the selection board to reproduce the procedure in accordance with point 11.
- c) Motivation Letter (maximum 5 pages) where the candidate describes his scientific trajectory and objectives for the scientific career;
- d) At least 2 Letters of Recommendation;
- e) Any other documents that the applicant considers relevant, namely for the assessment of the information referred to in section 2 of article 5 of the RJEC. 6.2.

7.2. The candidates submit the application and supporting documents, in PDF format, obligatorily, by electronic means, to the address drh@ipca.pt, by the deadline for submission of applications defined in this notice, indicating in "Subject" the Ref.ª "UIDP/05549/2020".

7.3. False statements provided by the candidates shall be punished by law.

8. **Members of the Jury:** The jury appointed by the President of the IPCA, as proposed by the Director of 2Ai, after being approved by the Scientific Council of EST and 2Ai, is composed of:

President:

Professor Doctor João Luís Araújo Martins Vilaça, Associate Professor of EST/IPCA, Coordinator of 2Ai and responsible for the project;

Effective Members:

- Professor Doctor Vítor Hugo Mendes da Costa Carvalho, Associate Professor of EST/IPCA.
- Professor Doctor José Henrique de Araújo Silveira de Brito, Auxiliar Professor of EST/IPCA.

Substitute members:

- Professor Doctor Nuno Sérgio Mendes Dias, Auxiliar Professor of EST/IPCA.
- Professor Doctor Duarte Filipe Oliveira Duque, Auxiliar Professor of EST/IPCA.

9. **Rules of operation of the Jury:** The jury shall deliberate by means of a nominal vote based on the selection criteria adopted and published, and abstentions shall not be allowed.
- 9.1. The jury meetings will be documented in written minutes, containing a summary of what has taken place, as well as the votes cast by each of the members and their reasons, being provided to the candidates whenever requested.
10. **Admission and exclusion:** Candidates who formalize their application incorrectly or who do not prove the admission requirements required in points 6, 6.1 and 6.2 are excluded from admission to the competition of this invitation to tender. The jury has the power to require any candidate, in case of doubt, to present documents proving their statements.

10.1. The exclusion decision shall be notified to the applicants by email for preliminary hearing to the interested parties.

10.2. After the deadline for the exercise of the right of hearing of the interested parties, the jury appreciates the allegations offered and, if it maintains the exclusion decision, notifies the excluded candidates by email with delivery receipt, beginning the application of the selection methods to admitted candidates.

11. **Method(s) and evaluation criteria:** The Selection Methods are the Assessment of the Scientific and Curricular Path (ASCP), weight of 90%, and the Interview (INT), weight of 10%. Moreover, an analysis of absolute merit based on the merit of the candidate's overall curriculum will be initially performed.

11.1. Absolute merit is assessed based on the merit of the candidates' overall curriculum in the area for which the competition is opened and considering the cumulative fulfillment of the following specific requirements:

- a) Sum of the number of publications, corrected for the impact factor of the publication and the author position (P), higher or equal to 40 (fourteen) in the last 3 (three) years (January 2017 to 2020), computed based on:

$$R = \sum_{i=1}^n (F_i \times f_i \times q_i)$$

Where variable i refers to the publication where n is the upper limit, F_i is the impact factor for the publication i (ISI Web of Knowledge) for the year of publication or, if not yet available, the year prior to publication, and for recent journals, the first assigned Impact Factor value, f_i is the author position correction factor for each publication i ($f = 1$ first or last author; $f = 0.75$ second or penultimate author; $f = 0.5$ third author, $f = 0.25$ other position), and q_i quartil correction factor for each publication i (based on *ISI Web of Knowledge*, $q = 1$ if Q1, $q = 0.75$ if Q2, $q = 0.5$ if Q3 e $q = 0.25$ if Q4). If a journal is included in multiple quartiles, the maximum quartile is used.

- b) A minimum of 5 (five) Q1 articles published (defined according to the ISI Web of Knowledge), as the first author, in the last 3 (three) years (January 2017 to 2020). If a journal is inserted in multiple quartiles, the maximum quartile is used.
- c) A minimum of 15 (fifteen) articles published in Quartile 1 (one) or Quartile 2 (two), according to ISI Web of Knowledge, in the last 3 (three) years (period between January 2017 and 2020) ;
- d) A patent or patent application in the last 3 (three) years (January 2017 to 2020);
- e) Total number of citations, according to Scopus, greater than or equal to 180 (one hundred and eighty);
- f) Mobility in a foreign research center for a minimum of 6 months;
- g) A level of citations that ensures an index h (according to Scopus) greater than 7 (seven);
- 11.2. The period of 3 (three) years referred to the absolute merit point may be extended by the Jury, at the request of the candidate, when justified on suspension of the scientific activity for socially protected reasons, namely for reasons of license of parenting, prolonged serious illness and other situations of unavailability for work legally protected.

- 11.3. The absolute merit of the candidate is expressed in the form of “refused” or “approved”. Only “approved” candidates are admitted to the remaining phases of the selection method, namely the evaluation of the scientific and curricular path and the interview.
- 11.4. In the event of non-approval on absolute merit, the selection board shall proceed to the prior hearing of the candidates rejected for the purpose of holding the interested parties, under the terms and for the purposes provided for in Article 121^o et seq. Of the Code of Administrative Procedure. After the hearing of the interested parties, the jury reasonably assesses the allegations offered and approves the final list of candidates rejected and approved in absolute merit.
- 11.5. The assessment of the scientific and curricular path focuses on the relevance, quality and actuality of the:
- Scientific/technological production of the last five years considered more relevant by the candidate;
 - Applied research activities, or practice-based, developed over the last five years and considered as the ones with higher impact by the candidate;
 - Activities regarding extension and dissemination of knowledge developed over the last five years, namely in the context of the promotion of the culture and the scientific practices, considered as the ones with higher relevance by the candidate;
 - Activities regarding management of science, technology and innovation programs, or of the experience in the observation and monitoring of the scientific and technological system or of the higher education, in Portugal or abroad
- 11.6. The five-year period referred to in the preceding paragraph may be increased by the jury, at the request of the candidate, when substantiated in the suspension of the scientific activity for socially protected reasons, namely parental leave, prolonged serious illness and other situations legally safeguarded of unavailability for work.
- 11.7. Assessment of the Scientific and Curricular Path (ASCP): Regarding ASCP, are considered the following evaluation criteria, with their respective weights, with the final ASCP score being obtained by the formula: $ASCP = 0,2AQ + 0,65SP + 0,10TC + 0,05ML$, in which the numerical value represents the weight to be applied:
- AQ – Academic Qualifications, with the respective weight of 20%;
 - SP – Scientific Performance, with the respective weight of 65%;
 - KT – Knowledge Transfer, with the respective weight of 10%;
 - ML – Motivation letter, with the respective weight of 5%;

In the applying of the above-mentioned criteria, the following parameters are evaluated, with the respective weights:

Critério	Parâmetro	Peso
[AQ] Academic Qualifications (20%)	Academic Qualifications of the candidate	100% de AQ
[SP] Scientific Performance (65%)	Scientific Production	65% de SP
	Scientific research activities	20% de SP

	Intervention in the scientific community	15% de SP
[TC] Knowledge Transfer (10%)	Patents / Intellectual Property Registry	50% de KT
	Cooperation and liaison activities for the productive / entrepreneurial fabric	50% de KT
[ML] – Motivation letter (5%)	Motivation Letter of the candidate	100% de ML

- Within the parameter Academic Qualifications of the Candidate (AQ.1), with the weight of 100%, it will be considered the candidate's training area: PhD in Biomedical Engineering, Electronic Engineering, Informatic Engineering, AQ.1 = 5 values; PhD in related scientific areas, AQ.1 = up to 4 values.

- Within the parameter Scientific Production (SP.1), with the weight of 65%, it will be considered the quality and the quantity of the scientific production (papers published in international peer-reviewed journals, books, book chapters, communications in conferences/congresses), as well as the recognition that is given to it by the scientific community (translated in the impact of the scientific production and in the citations that are made by other authors).

The classification in the parameter SP.1 will be obtained by the formula $0,5AV + 0,5VRAP$: - AV corresponds to the absolute valorization regarding the scientific production: AV = up to 5 values; - VRAP corresponds to the valorization relative to the area of preference: VRAP = 5 values, if the scientific production is in the area of preference; VRAP = up to 4 values, if the scientific production is in related scientific areas; VRAP = up to 1 value, if the scientific production is in other areas.

- Within the parameter Scientific research activities (SP.2), with the weight of 20%, it will be considered the quality and the quantity of scientific projects that the candidate has coordinated or in which has participated, funded in a competitive basis, through National, European or International agencies, or funded by companies. In the evaluation of the quality, it will be taken into account the funding obtained, the degree of requirement of the call for tenders and the results attained/achieved, in particular if those results had repercussion in the generation of value, through the creation of products or services with impact in the society. In this parameter should also be consider scientific-pedagogical management activities, namely participation in academic management bodies, participation in academic juries and supervision / co-supervision of postgraduate students.

The classification in the parameter SP.2 will be obtained by the formula $0,5AV + 0,5VRAP$: - AV corresponds to the absolute appreciation of the coordination/participation in scientific projects and scientific-pedagogical management activities: AV = up to 5 values; - VRAP corresponds to the valorization relative to the area of preference: VRAP = 5 values, if the coordination/participation in scientific projects is in

the area of preference; VRAP = up to 4 values, if the coordination/participation in scientific projects and the activities of pedagogical scientific management are in related scientific areas; VRAP = up to 1 value, if the coordination/participation in scientific projects and the activities of pedagogical scientific management are in other areas.

In the parameter Intervention in the Scientific Community (SP.3), with the weight of 15%, the capacity of intervention in the scientific community will be evaluated, expressed, namely, through the organization of scientific events, participation as editor / co-editor of journals, participation in the evaluation of projects and articles, presentations as guest lecture, oral presentations at international conferences, as well as the recognition obtained through the awarding of prizes or other distinctions and their impact on the scientific community. The classification in parameter DC.3 will be obtained by the formula $0,5AV + 0,5VRAP$: - AV corresponds to the absolute valorization relative to the scientific community: AV = up to 5 values; - VRAP corresponds to the valorization relative to the area of preference: VRAP = 5 values, if the intervention in the scientific community is in the area of preference; VRAP = up to 4 values, if intervention in the scientific community is in related scientific areas; VRAP = up to 1 value, if intervention in the scientific community is in other areas.

- In the parameter Patents / Intellectual Property Registry (KT.1), with the weight of 50%, the authorship and co-authorship of patents or utility models will be considered, considering the economic valuation resulting from these patents / registrations of intellectual property and its impact on society.

The classification in the parameter KT.1 will be obtained by the formula $0,4AV + 0,6VRAP$: - AV corresponds to the absolute valorization relative to the patents/intellectual property registry: AV = up to 5 values; - VRAP corresponds to the valorization relative to the area of preference: VRAP = 5 values, if Intellectual Property Patents / Registrations are in the preferred area; VRAP = up to 4 values, if Intellectual Property Patents / Registrations are in related scientific areas; VRAP = up to 1 value, if Intellectual Property Patents / Registrations are in other areas.

- In the parameter Cooperation and liaison activities for the productive / entrepreneurial fabric (KT.2), with a weight of 50%, will be given into consideration the economic value of the research results achieved, as measured by the development and knowledge / technology transfer contracts to which they originated and the spin-off companies to which they have contributed.

The classification in the parameter KT.2 will be obtained by the formula $0,4AV + 0,6VRAP$: - AV corresponds to the absolute valorization relative to the Cooperation and liaison activities for the productive / entrepreneurial fabric: AV = up to 5 values; - VRAP corresponds to the valorization relative to the area of preference: VRAP = 5 values, if cooperative and productive-business-related activities are in the area of preference; VRAP = up to 4 values, if the activities of cooperation and connection to the productive

/ business fabric are in related scientific areas; VRAP = up to 1 value, if cooperative and productive-business-related activities are in other areas.

- In the parameter motivation letter (ML.1), with a weight of 100%, will be evaluated the relevance of the scientific trajectory to the career profile and personal goals. Similarly, the interest of the candidate in the core areas mentioned in this announcement will be analyzed and the interest in the development of applied scientific research projects will be valued. This parameter will be rated on a scale of 0 to 5 values.

- 11.8. The classification obtained in the ASCP is expressed on a numerical scale from 0 to 5 values.
- 11.9. The classification of each candidate in the ASCP is obtained by the average of the classifications from each element of the jury. In case of a tie, the tie-breaking decision is up to the president of the jury.
- 11.10. With the ASCP finished, to the 3 (three) candidates with the highest classification in the ASCP will be applied the next Evaluation Method, the Interview (INT), with the immediate exclusion of the remaining candidates.
- 11.11. Candidates who do not attend, for reasons not legally justified, the interview are excluded regardless of the score obtained in the evaluation method of the scientific and curricular path.
- 11.12. The INT will be classified on a numerical scale from 0 to 5 values, aiming to obtain clarifications and explanations regarding the curricular elements and/or additional information, as well as to evaluate the attitude profile and the motivation of the candidate.
- 11.13. The INT has a maximum duration of 30 minutes, in which the following evaluation criteria will be applied, with the respective weights, and the final classification of INT will be obtained by the formula $INT = 0,7RCV + 0,3MTV$, in which the numerical value represents the weight to be applied: a) RCV – Capacity to expose the Relevance of the Curriculum Vitae (CV), with the respective weight of 70%; b) MTV – Motivation to perform the tasks within the Work Plan, with the respective weight of 30%.

- In the applying of the above-mentioned criteria, the following parameters are evaluated, with the respective weights:

Criteria Weighting Parameter Weighting Capacity to expose the Relevance of the Curriculum Vitae (RCV = 70%): RCV.1) Exposure of the relevance of the CV 40%; RCV.2) Knowledge and skills 60%;

Motivation to perform the tasks within the work plan (MTV = 30%): MTV.1) Motivation 100%.

- Within the parameter Exposure of the Relevance of the CV (RCV.1), with the weight of 40%, it will be evaluated the capacity to expose in a precise, succinct and contextualized way the relevance of the candidate's CV to perform the tasks within the position to which he/she is applying for.

The classification in the parameter RCV.1 will be obtained by the formula $0,6AV + 0,4VRAP$: - AV corresponds to the absolute valorization regarding the exposure of the relevance of the CV: AV = up to 5 values; - VRAP corresponds to the valorization relative to the area of preference: VRAP = 5 values, if the relevance of the CV is in the area of preference; VRAP = up to 4 values, if the relevance of the CV is in related scientific areas; VRAP = up to 1 value, if the relevance of the CV is in other areas.

- Within the parameter Knowledge and Skills (RCV.2), with the weight of 60%, it will be evaluated the knowledge and the skills with which the candidate is qualified to perform the tasks within the position to which he/she is applying for.

The classification in the parameter RCV.2 will be obtained by the formula $0,6AV + 0,4VRAP$: - AV corresponds to the absolute valorization regarding the knowledge and skills with which the candidate is qualified: AV = up to 5 values; - VRAP corresponds to the valorization relative to the area of preference: VRAP = 5 values, if the knowledge and skills with which the candidate is qualified are in the area of preference; VRAP = up to 4 values, if the knowledge and skills with which the candidate is qualified are in related scientific areas; VRAP = up to 1 value, if the knowledge and skills with which the candidate is qualified are in other areas.

- Within the parameter Motivation (MTV.1), with the weight of 100%, it will be evaluated the candidate's motivation to perform the tasks within the position to which he/she is applying for, measured by the evidenced stimulus to execute the tasks/activities related with the position to which he/she is applying for and the project to be developed, as well as the candidate's future prospects and its suitability to the requirements of the present position.

The classification in the parameter MTV.1 will be obtained according to the absolute valorization of the motivation evidenced by the candidate to perform the tasks within the position to which he/she is applying for: up to 5 values.

12. Order of candidates: The order of the candidates must be based on the evaluation made according to the evaluation criteria contained in this announcement.

12.1. The final classification (FC) of each candidate is obtained by the average of the classifications of each one of the elements of the Jury. In case of a tie, the decision of the tiebreaker shall be the responsibility of the President of the Jury.

12.2. The FC of the candidates is expressed in the numerical scale of [0 to 5 values], the classification being obtained through the weighted average, obtained by the formula $FC = 0.9ASCP + 0.1INT$.

12.3. When the President of the Jury is from the scientific area for which the contest is open, he / she votes and, in case of a tie, the voting will be considered automatically tied according to the President's vote. When not in the scientific area of the contest, you only vote in the

- event of a tie, using the following tiebreaker criteria: highest average of the overall final scores awarded by the jury members. Maintaining the tie, the highest average of the overall scores given in the Scientific Performance criterion will be considered.
- 12.4. After completion of the application of the evaluation criteria, the jury will draw up an orderly list of successful candidates with their classification.
13. **Participation of interested parties and decision:** The final ordering project is notified to the candidates, by email with receipt of delivery of the notification, to pronounce for the purpose of preliminary be automatically approved.
- 13.1. At the hearing of the interested parties, the jury appreciates the allegations offered and approves the final ordering list of the successful candidates. Within 90 days, from the deadline for submission of applications, the final decisions of the jury are given.
- 13.2. The final decision of the jury is approved by the President of the IPCA that also decides on the hiring.
14. **Publication of results:** The list of admitted and excluded candidates, as well as the final ranking list of the successful candidates are publicized on the IPCA/DRH website, and the candidates are notified by email with receipt of delivery of the notification.
15. The present tender is exclusively destined to fill the indicated vacancies and may be terminated until the homologation of the final ranking list of candidates and expires with the respective occupation of the jobs on offer.
16. hearing to the interested parties, pursuant to article 121^o and following of the Code of Administrative Procedure. After being notified, candidates have 10 working days to comment at the prior hearing. In the absence of allegations from the candidates, the final ordination project shall
17. The present announcement was approved by the jury of the tender at its meeting on 11th May 2020, according to the minutes of the meeting approved therein.
18. 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.
19. Pursuant to Article 9 (h) of the Constitution, the IPCA, as an employer, actively promotes a policy of equal opportunities for men and women in access to employment and advancement, and scrupulously to avoid all forms of discrimination.
20. The selection of the candidates to be hired will be conditional, with the corresponding labour contracts being executed depending on the availability of the budget and corresponding funding

under the legislation and the regulations and rules established by the Foundation for Science and Technology (FCT).

The President of IPCA,

Professor Doctor Maria José da Silva Fernandes

ANNEX
APPLICATION

Dear President of Polytechnic Institute of Cávado and Ave

Name (...), birthdate (...), VAT N^o (...), identification card n^o (...), address (...), postal card (...), mobile phone (...), e-mail (...), literary abilities (...), hereby requests that you kindly accept my application for the international competition for recruitment in the form of an uncertain term contract under the Labor Code and Decree-Law No. 57/2016 of 29 August, as amended by Law no. 57/2017, of 19 July, of 1 doctoral position in the scientific areas of _____, according to a notice published in the Diário da República no __, 2nd series, of __/__/__, with Ref. (...).

Further declares that it agrees to receive by email the communications and notifications resulting from the present selection tender procedure.

Find attached the following documents: (...)

(Place and date)

(Signature)