

UNIVERSITY OF PORTO

NOTICE NO. 837/2024

Professor José Manuel Pereira Dias de Castro Lopes, Full Professor at the Faculty of Medicine of the University of Porto, Vice-Rector of the University of Porto:

Following my Order issued on 24th May 2024, by delegated power under the Ordinance no. 9493/2022 published in the Official Gazette (*Diário da República*), 2nd series, no. 148 of 2nd August, this call for application is published for three positions of Assistant Professor in the area of Informatics Engineering of the Faculty of Engineering of this University.

The application procedure will remain in force for a period of 30 (thirty) business days as from the date immediately following the publication of this Notice in the Official Gazette.

During the funding period, this contract is part of the Funding Programme Contract between U.Porto and the Directorate-General for Higher Education (DGES) for the implementation of the "U.Porto Programme for Multidisciplinary Education and Training - Impulso Jovens STEAM & Impulso Adultos", a project funded by European Union funds under the NextGeneration EU mechanism through the Portuguese Republic's Recovery and Resilience Plan (PRR), namely through Investment RE C06-i03.03 (Impulso Adultos). The allocation rate will be defined annually during the funding period according to the distribution of teaching service allocated to the teacher.

At the end of the funding period, the costs of the contract resulting from this call for aplications will be borne in full by the contracting organisation.

1. Applicable legal provisions

Articles 37 to 51 and 62-A of the University Teaching Career Statute, republished by Decree-Law no. 205/2009, of 31 August, and amended by Law no. 8/2010, of 13 May; Regulation of Competitions for the Recruitment of Full, Associate and Assistant Professors of the University of Porto (abbreviated to Regulation), approved by Order no. 12913/2010, published in the Diário da República, 2nd series, no. 154, of 10 August 2010 and Deliberation (extract) no. 380/2019, published in the Diário da República. 212913/2010, published in Diário da República, 2.2 série, n.2 154, of 10 August 2010 and Deliberation (extract) n.2 380/2019, published in Diário da República, 2.3 série, n.2 64, of 1 April.

2. Eligible candidates

2.1. Under the provisions of Article 41-A of the ECDU, all candidates in this call for applications must hold a PhD degree.

If the doctoral degree was awarded by a foreign higher education institution, it must be recognized by a Portuguese higher education institution, under the terms of Decree-Law no. 66/2018, published in the Official Gazette, 1st series, no. 157 of 16 August. This formality must be accomplished by the application deadline.









3. Approval based on absolute merit

- **3.1** If there are no grounds for rejecting the applications, the Jury will decide whether or not to approve them on absolute merit, by justified roll-call vote, with no abstentions allowed.
- **3.2** A candidate who is approved by an absolute majority of the voting members of the jury will be considered to have passed in absolute merit.
- **3.3.** Candidates will be approved on absolute merit if they have an overall curriculum vitae that the jury considers to have scientific and pedagogical merit, research capacity and activity compatible with the disciplinary area for which the competition was opened and appropriate to the respective teaching category, as documented in the respective information submitted for the competition.
- **3.4.** For the purposes of the assessment referred to in the previous point, a favourable vote must be based on cumulative compliance with the following qualitative and quantitative circumstances or requirements:
 - a) hold a doctoral degree in the disciplinary area of Informatics Engineering or another considered appropriate, taking into account the scientific sub-areas of the Department of Informatics Engineering (DEI)* of the Faculty of Engineering of the University of Porto (FEUP);
 - b) have a curriculum whose merit the members of the jury consider to be of a scientific level, research capacity and activity compatible with the disciplinary area and category for which the competition is open;
 - c) have high-quality, significant and proven scientific activity in the scientific sub-area of Intelligent Systems (SINT) of the DEI*, in topics related to Artificial Intelligence (AI) and specifically in one or more of the topics identified in 4.2, over a period of 5 (five) years from the deadline for applications;
 - d) have selected scientific publications (in the sets of articles referred to in 6.2f) of good quality, preferably as first author, and which prove the candidate's ability to publish in reference journals/conferences (e.g., IEEE/ACM Transactions, Elsevier/Springer SCImago SJR Q1, CORE Ranking A*/A) in Al topics identified in point 4.2.
 - e) have submitted a quality, consistent, current and viable scientific-pedagogical, extension and economic and social valorisation of knowledge programme whose candidate's previous scientific work shows that it is feasible to carry it out and which can contribute to advances in the state of the art in one or more of the AI themes identified in point 4.2 and with publication of the results in leading AI journals/conferences.

The 5-year period referred to in point c) and point 4.2 may be extended by the jury, at the candidate's request, when justified by suspension of scientific activity for socially protected reasons, exclusively for reasons of parental leave. The extension will be one year per birth during the 5-year period, and the candidate must provide a birth certificate for each child or another official document establishing their connection to the child.

(*scientific subfields of DEI: https://sigarra.up.pt/feup/pt/UNI GERAL.UNIDADE VIEW?pv unidade=151).









4. Evaluation and ranking based on relative merit

Once the candidates approved on absolute merit have been definitively identified, they will be ranked on relative merit, based on the aspects and criteria for selection, the respective scores and the final evaluation system, established in accordance with the provisions of Article 50(6) of the ECDU and Article 16 of the Regulations.

4.1. Evaluation methodology

Candidates approved on absolute merit will be subject to a curriculum evaluation, which may be complemented by a public presentation hearing, to which all candidates approved on absolute merit will be subject, aimed at clarifying aspects related to the curriculum and the scientific-pedagogical and extension programme, bearing in mind the general duties assigned to university lecturers by article 4 of the ECDU, focusing on the aspects and respective criteria identified below.

4.2. Curriculum evaluation dimensions

Candidates should be assessed on the basis of their work over the last 5 years (counting from the deadline for applications) and on the following aspects and programmes. Curricular aspects in the disciplinary area for which the competition is open should be highlighted, with a special focus on the scientific sub-area of Intelligent Systems at DEI* and on the following topics related to Artificial Intelligence (AI): AI (Artificial Intelligence) Algorithms for Computer Vision; AI Algorithms for Natural Language Processing; AI Algorithms for Robotics; Cognitive, bio-inspired and brain-inspired AI Computational Models and Approaches; Ethical, Trustworthy and Sustainable AI; Foundation Models and Generative AI; Machine Learning and Deep Learning; Methodologies and Tools for MLOps/AIOps; ML Algorithms for Complex and Multimodal Data; Multiagent Systems, Distributed and Federated AI; Reinforcement Learning; and Science, Theory and Philosophy of AI:

- a) Scientific Merit (V_{MC}) 65%;
- b) Pedagogical Experience and Merit (V_{EMP}) 12%;
- c) Extension tasks economic and social valorisation of knowledge (V_{TC}) 8%;
- d) Scientific/Pedagogical and Extension Programme (PCP) 15%.

4.3. Evaluation criteria

The criteria to be taken into consideration when assessing each of the assessment and programme aspects identified in the previous point and the weight to be given to each of them in the final classification are as follows.

4.3.1. Criteria for assessing the Scientific Merit dimension (V_{MC}) - 65%

4.3.1.1. CMC1 – Scientific Production

Quality and quantity of scientific production in the areas for which this call is open (books, articles in journals, publications in conference proceedings, etc.) expressed by the number and type of publications, and by the









recognition given to them by the scientific community (reflected in the quality of the scientific journals of the publications, the places of publication and presentation, and the references made to them by other authors).

Priority will be given to the publication of scientific articles in A* or A conferences (CORE ranking), in Elsevier/Springer journals catalogued Q1 in SCImago (SJR), in journals and conferences with ACM (Association for Computing Machinery) or IEEE (Institute of Electrical and Electronics Engineers) accreditation, with emphasis on ACM Transactions or IEEE Transactions journals. Clear preference will be given to publications in reference journals and conferences with significant contributions to the development of the disciplinary area to which the competition relates, and especially in the scientific sub-area of Intelligent Systems (SINT) of the DEI* and in the themes of point 4.2.

The applications must include:

- description of the applicant's strategy and practices in terms of publications and choice of conferences/workshops/journals;
- clear identification of work published first at conferences/workshops and later in journals, resulting from extensions of articles;
- identification of the practices followed by the relevant scientific community regarding the ordering of the authors in the publications.

When assessing quality, special emphasis should be given to articles submitted in which the candidate is first author and to the:

- Quality and relevance of the 5 (five) scientific articles mentioned in the curriculum vitae submitted, published in the last 5 (five) years, which the candidates consider most representative of their research activity;
- The quality and relevance of the 5 (five) scientific articles mentioned in the curriculum vitae presented, which the candidates consider to be the most representative of their research activity up to the date of submission of the competition documents.

To the articles submitted, candidates must add a summarised justification of the international scientific importance and a description of the candidate's contributions to each of these articles.

(Submission of less than the established number of selected contributions is not an exclusion factor)

4.3.1.2. CMC2 - Coordination and implementation of research projects

Quality and quantity of scientific projects financed on a competitive basis by public funds, through national or international agencies or by companies, in which you have participated (indicating the role played) and the results obtained in them, with emphasis on project coordination.

When assessing quality, account should be taken of whether the projects are international, bilateral or national, their









size and the funding obtained, how demanding the competition was, the evaluations of the projects carried out and the prototypes realised, in particular whether they resulted in products or services.

In assessing quality, special emphasis should also be given to the quality, relevance and contributions related to the 5 (five) R&D projects mentioned in the submitted curriculum vitae that the candidates consider to be most representative. Candidates should describe the national/international relevance of each project, the funding organisation and the overall budget (and local if this does not coincide), the candidate's main contributions during the preparation of the proposal and during the execution of the project, the roles played by the candidate in each project and the main tasks he/she performed.

(Submission of less than the established number of selected contributions is not an exclusion factor)

4.3.1.3. CMC3 - Involvement in the scientific and professional communities

Ability to intervene in the scientific and professional communities, expressed in particular by collaborating in the publication of journals, participating in organising committees and technical and scientific committees of international conferences, presenting guest lectures, participating in academic juries outside the institution itself and winning prizes and awards.

4.3.2. Criteria for assessing the Pedagogical Experience and Merit dimension (VEMP) - 12%

4.3.2.1. CEMP1 - Pedagogical projects

Promoting new pedagogical projects (e.g., developing new curricular unit programmes, creating and coordinating new courses or study programmes, etc.) or reforming and improving existing projects (e.g., reformulating existing curricular unit programmes, participating in the reorganisation or existing study programmes), as well as carrying out projects with an impact on the teaching/learning process. Evidence of a link between teaching and research activity, namely the involvement of undergraduate students in research activities and the integration of master's students in research projects.

4.3.2.2. CEMP2 - Production of pedagogical material

Quality and quantity of teaching material produced by the candidate, namely in the form of books, as well as publications of a teaching nature in prestigious international journals or conferences.

In assessing quality, special emphasis should be placed on the quality, relevance and contributions related to the 5 (five) teaching contributions mentioned in the curriculum vitae submitted that candidates consider to be most representative, describing their main contributions and tasks performed.

(The presentation of less than 5 selected contributions is not a factor for exclusion)

4.3.2.3. CEMP3 - Teaching activity

Experience, scope and quality of the teaching activity carried out by the candidate. Whenever possible, the assessment of the quality of the teaching activity carried out by the candidate should use the results of objective methods based on opinion surveys (pedagogical surveys) and peer evaluation.









In assessing quality, special emphasis should be placed on the quality, relevance and contributions related to the five (5) curricular units taught and mentioned in the submitted curriculum vitae that the candidates consider most representative, describing the main contributions and tasks carried out by the candidate, and including an analysis of the results obtained and the pedagogical surveys.

(The presentation of less than 5 selected contributions is not an exclusion factor)

4.3.3. Criteria for assessing the Extension tasks - economic and social valorisation of knowledge dimension (V_{TC}) – 8%

In assessing quality, and in accordance with the framework they may have in sub-criteria 4.3.3.1, 4.3.3.2 and 4.3.3.3, special emphasis should be placed on the quality, relevance and contributions related to the 5 (five) projects/works/activities for the economic and social valorisation of knowledge mentioned in the submitted curriculum vitae that candidates consider most relevant, and candidates should describe the national/international relevance and the main contributions of the candidate.

(Submission of less than 5 selected contributions is not an exclusion factor)

4.3.3.1. CTC1 - Patents, registration, and ownership of rights, development of technical standards and legislation

Authorship and co-authorship of patents, registrations of ownership of intellectual property rights on methodologies, software, algorithms, computational methods and mathematical methods.

Participation in drafting legislation and technical standards.

4.3.3.2. CTC2 - Consulting services and study and development contracts

Coordination and participation in consultancy activities and/or study and development activities involving the business environment and the public sector, with candidates emphasising the scientific and technological aspects involved in these activities.

Participation as an expert in panels and evaluation processes for research and technological development projects in companies and/or organisations in the scientific and technological system.

Coordination and participation as a trainer in vocational training or technological specialisation courses aimed at companies or the public sector.

The assessment of this criterion should also take into account the economic value of the research results achieved, measured by the development and technology transfer contracts to which they have given rise and the spinoff companies to whose creation they have contributed.

4.3.3.3. CTC3 - Dissemination of science and technology

Coordination and participation in scientific and technological dissemination initiatives for the scientific community (e.g. organisation of conferences) and for various audiences.

Scientific and technological dissemination publications.









4.3.4. Criteria for assessing the Scientific/Pedagogical and Extension Programme dimension (PCP) – 15%

A scientific/pedagogical and outreach programme, covering a period of 5 (five) years, in the subject area to which the competition relates and in particular in the scientific sub-area of Intelligent Systems (SINT) of the DEI and in one or more of the Artificial Intelligence themes indicated in point 4.2, and the respective means of putting it into practice. The programme should be assessed according to its consistency, feasibility and impact in each of the three areas:

CPD1 – Programa de desenvolvimento da atividade científica

CPD2 - Programa de desenvolvimento de atividade pedagógica

CPD3 – <u>Programa de desenvolvimento da atividade de extensão universitária e de valorização Económica e Social</u> do Conhecimento

5. Procedural guidelines for the Selection Committee

5.1. Scoring of candidates

Each member of the selection board makes a reasoned judgement, scoring each candidate for each section on a scale of 0 to 100 points, taking into account the criteria approved for each section, with a degree of rigour appropriate to the category for which the competition is open.

5.2. Public hearing

The selection board has the possibility of holding public hearings, on equal terms for all candidates who have been approved on absolute merit, for the purpose of personal clarification of the evaluation elements contained in the documentation submitted by the candidates.

If it is necessary to hold these public hearings, they will take place between the 30th and 70th day after the deadline for submitting applications, and all candidates will be informed by e-mail at least ten working days in advance of the date and place where these public hearings will take place.

5.3. Final Result

The Final Result (RF) of the evaluation of each candidate by each member of the jury is calculated using the weighting formula of the various curricular dimensions:

RF=
$$(0.65*V_{MC}) + (0.12*V_{EMP}) + (0.08*V_{TC}) + (0.15*V_{PCP})$$

which reflects the weights associated with each dimension.

Following the reasoned individual assessment, each member of the selection board draws up an ordered list of candidates, with which he takes part in the votes that lead to the decision and the final ranking of the candidates under the terms of point 4, where there can be no tie between candidates in the final ranking.









5.4. Deliberations of the Selection Committee

5.4.1. Any deliberation will result from Article 17, paragraph 12 of the Regulation, applicable by virtue of Article 83-A of the ECDU, which determined its approval for the purpose of implementing the norms of that legal diploma, covering the procedural proceedings of the competitions, including the evaluation system and final classification.

As a consequence, in accordance with Article 17, paragraph 12 of the aforementioned Regulation, the jury shall deliberate through a nominal vote justified by the selection criteria adopted and disclosed for the approval and ranking of the candidates, with an absolute majority of the votes of the members present being required for any decision, with abstentions not being allowed.

5.4.2. Ranking Methodology

In the various votes, each member of the jury must respect their ordered list, observing the following in the votes:

- a) The first vote is to determine the candidate placed in 1st place, counting the number of votes each candidate received for that position;
- b) If a candidate obtains an absolute majority of the votes for 1st place, they are placed in the respective position and removed from the scrutiny, initiating the procedure to choose the candidate who will occupy the 2nd place;
- c) If no candidate obtains an absolute majority of the votes for 1st place, a new scrutiny is initiated, only among the candidates who received votes for 1st place, after removing the candidate with the least votes for that position in the previous vote;
- d) If there is a tie between two or more candidates in the position of least voted, a tie-break vote is carried out only among these, counting the number of relative first positions of each, with the least voted being removed;
- e) If the tie persists between two or more candidates in the position of least voted, but the number of tied candidates for the least voted position has been reduced, relative to the previous voting round, a new tie-break vote is carried out only among the tied candidates for the least voted position, counting the number of relative first positions of each, with the least voted being removed;
- f) If the tie persists between two or more candidates in the position of least voted, without reducing the number of tied candidates for the least voted position, relative to the previous voting round, the tie is broken through the casting vote of the President or by the exercise of the tie-breaking vote, as appropriate, with the candidate chosen to integrate the subsequent vote for the same position being the one voted by the President;
- g) If there is a tie when only two or more candidates remain for the 1st place, the tie is broken by the casting vote of the President of the jury or by the exercise of the tie-breaking vote, as appropriate;
- h) Once the candidate for the 1st place is chosen, they are removed from the votes and the procedure to choose









the candidate to be placed in the 2nd place begins, repeating the process described in the previous paragraphs for subsequent positions until a single ordered list of all candidates is obtained.

6. Application Submission

6.1. Applications must be submitted exclusively on the FEUP website at the following address: https://sigarra.up.pt/feup/pt/CNT CAND GERAL.CONCURSOS LIST by the deadline.

6.2. Required application procedures and documents

The application must be accompanied by the following documents, under penalty of exclusion:

- a) Application form (personal data and declarations), fully completed, dated, and signed, according to the mandatory form, available at: https://sigarra.up.pt/up/pt/conteudos geral.ver?pct pag id=1004282&pct parametros=p pagina=1004282 &pct grupo=3123&pct grupo=2013&pct grupo=2015&pct grupo=2461#2461;
- b) Doctoral certificate, except for cases corresponding to the award of the doctoral degree and/or the title of aggregate at the University of Porto;
- c) Proof of recognition of the Doctorate conferred by a foreign higher education institution, by a Portuguese higher education institution (if applicable);
- d) Curriculum Vitae, containing all the relevant information for assessing the application, as well as demonstrating compliance with the criteria set out in point 3 of this notice, taking into account the assessment and ranking criteria set out in point 4.3. of this notice for the assessment strands and parameters, namely information on scientific publications indexed in the Google Scholar and SCOPUS databases, including citation indicators, excluding self-citations, and an indication of the quartile of each journal in the SJR (SCImago Journal Rank) and the CORE Ranking (ICORE) assigned to each conference. The candidate must structure their CV in such a way as to make it easy to quickly and completely identify their contribution, in the disciplinary area in which the competition is open, in each of the subsections of point 4.3.;
- e) A copy of each of the works and proof of activities mentioned in the CV submitted, which make it possible to prove and assess the criteria in points 3.4. and 4.3. of this notice;
- f) File with selected contributions, indicating the reasons for highlighting these contributions (candidates must add a summarised justification of the international scientific importance of each of these articles to the articles submitted): (1) Identification of 5 (five) scientific articles mentioned in the curriculum vitae submitted, published in the last 5 (five) years, which the candidates consider to be the most representative of their research activity; (2) Identification of 5 (five) scientific articles mentioned in the curriculum vitae submitted which the candidates consider to be the most representative of their research activity up to the date of submission of the competition documents; (3) Identification of 5 (five) R&D projects mentioned in the curriculum vitae submitted that the candidates consider to be the most representative, with the candidates









describing their national/international relevance and their main contributions; (4) Identification of 5 (five) works/activities/contributions in relation to teaching material mentioned in the curriculum vitae submitted that the candidates consider to be the most representative, with the candidates describing their main contributions; (6) Identification of 5 (five) curricular units taught mentioned in the curriculum vitae submitted that the candidates consider to be the most representative, describing their main contributions; (7) Identification of 5 (five) projects/works/activities for the economic and social valorisation of knowledge mentioned in the curriculum vitae submitted that the candidates consider to be the most relevant;

- g) A file containing the scientific/pedagogical programme, university outreach and the economic and social valorisation of knowledge, describing the research, teaching and university outreach activities that the candidate intends to carry out in the first five years after being hired as an Assistant Professor, in the area of Computer Engineering and in particular in the scientific sub-area of Intelligent Systems (SINT) of the DEI and considering one or more of the themes presented in point 4.2. The document corresponding to the scientific/pedagogical and extension programme may not exceed 10 A4 pages (Times or Times New Roman font, minimum 10 point), with the exception of the references section.
- **6.3.** Each of the documents listed in point 6.2 e) of the invitation to tender must be submitted in an individual file and in full in the Sigarra system. The documents can be integrated into folders with a compressed format (zip, rar, 7z), but it is necessary to take into account the system's limit for uploading, which is set at a maximum of 720MB per file or compressed folder. Each application can submit several compressed files or folders, each with a limit of 720 MB, and the total number of compressed files/folders submitted is not limited.
- **6.4.** For the purposes of evaluating applications, any documents that can be accessed via links will not be considered, with the exception of those that refer to publications with a DOI, although these documents must still be submitted to the Sigarra system, as defined in point 6.3 above.
- 6.5. The documents mentioned in point 6.2 must preferably be submitted in a non-editable format.
- **6.6.** Failure to comply with point 6.1 will result in the application being rejected.
- **6.7.** Failure to submit or submission after the deadline of the documents referred to in points a) to g) of paragraph 6.2 will result in the application not being accepted.

7. Notifications and requests for a prior hearing

- **7.1.** The Human Resources Service of the Center for Resources and Common Services of the University of Porto will notify the candidates of the administrative admission or non-admission decision to the competition, which will be based on compliance or non-compliance with the conditions established in paragraph 2 of this notice and the conditions established regarding the application documentation referred to in paragraph 6.2 of this notice
- **7.2.** There is a right to prior hearing, in accordance with the provisions of articles 121 and 122 of the Administrative Procedure Code, for candidates who have not been administratively admitted, for candidates who have not been









approved in absolute merit, and for candidates ranked on the list of candidates who cannot be appointed to the job position in the competition. All candidates are notified of the final jury decision.

7.3. Notifications are made by email, in accordance with articles 112, paragraph 1, subparagraph c), and 113, paragraphs 5 and 6, of the Administrative Procedure Code. The deadline for candidates to make written submissions is ten working days.

8. Composition of the Jury

President: Professor Rui Artur Bartolo Calçada, Director and Full Professor of the Faculty of Engineering of the University of Porto, exercising delegated authority by Order No. 3982/2024, published in *Diário da República*, 22nd series, No. 72, April 11.

Members:

Professor Nuno Miguel Borges de Pinho Cruz de Vasconcelos, Full Professor, Department of Electrical and Computer Engineering, University of California San Diego;

Professor Teresa Bernarda Ludermir, Full Professor, Federal University of Pernambuco;

Professor Arlindo Manuel Limede de Oliveira, Full Professor, Department of Computer Engineering, Instituto Superior Técnico, University of Lisbon;

Professor Carlos Miguel Ferraz Baquero-Moreno, Full Professor, Faculty of Engineering, University of Porto;

Professor Rui Filipe Lima Maranhão de Abreu, Full Professor, Faculty of Engineering, University of Porto;

9. Other Provisions

Joint Order No. 373/2000, of March 31, issued by the Minister for State Reform and Public Administration and the Minister for Equality, determines the obligation to include the following mention in admission and access competitions: "In compliance with article 9(h) of the Constitution, the Public Administration, as an employer, actively promotes a policy of equal opportunities between men and women in access to employment and professional advancement, ensuring scrupulously to avoid any form of discrimination." In this sense, terms such as "candidates," "professors," and similar ones are not used in this notice to refer to the gender of individuals. Similarly, no candidate can be privileged, benefited, harmed, or deprived of any right or exempted from any duty based on, namely, ancestry, age, sexual orientation, marital status, family situation, economic situation, education, origin or social condition, genetic heritage, reduced work capacity, disability, chronic illness, nationality, ethnic origin or race, territory of origin, language, religion, political or ideological beliefs, and union membership.

24th May 2024 – The Vice-Rector, Professor José Manuel Pereira Dias de Castro Lopes





