

**Research Studentship (for students of a course that does not award an academic degree)**

Applications are open for one Research Studentship (for students of a course that does not award an academic degree), within the framework of project MIA-BREAST, reference 2022.04485.PTDC, financed by national funds through FCT/MCTES(PIDDAC), under the following conditions:

**Scientific Area:** Artificial Intelligence

**Admission Requirements:**

a) to hold a master degree and be enrolled at a course that does not award an academic degree and it is integrated in the educational project of a higher education institution, performed in association or cooperation with one or several R&D units;

b) not to exceed with this contract, including the possible renovations, an accumulated period of two years in this type of studentship, continuously or with interruptions.

**Workplan:** This work aims to develop new machine learning methods for breast diagnosis. Specifically, multiple instance learning (MIL) applied to three different image modalities: (i) mammography, (ii) ultrasound and (iii) Magnetic Resonance Imaging (MRI). The work will comprise the following two tasks: (1) classification, and (2) detection of breast lesions. The first task aims to assign a score, while the second is targeted to locate the region of the lesion in the breast tissue. To accomplish the first task above, we will use MIL – a weakly supervised training approach - that assigns a score (i.e., classification). For the second task (detection), the salient regions will be obtained using vision transformers embedded in the MIL framework. As a final stage of the working plan, we also use other methodology – multimodal meta-learning – as a way to obtain the breast diagnosis in the breast multimodality.

**Legislation and Regulations:** Statute of Scientific Research Fellow, approved by Law nr. 40/2004, of August 18, as worded by Decree-Law nr. 123/2019, of August 28; FCT Regulation for Research Studentships and Fellowships, available on <https://www.fct.pt/apoios/bolsas/docs/RegulamentoBolsasFCT2019.pdf> and <https://dre.pt/application/file/a/127230968> .

**Workplace:** The work will be developed at Institute for Systems and Robotics of Instituto Superior Técnico, under the scientific supervision of Profs. Carlos Santiago, Catarina Barata and Jacinto C. Nascimento.

**Duration:** The research fellowship will have the duration of 12 months. It's expected to begin in June/2023 and may eventually be renewed.

**Monthly maintenance allowance:** According to the values for Research Fellowships awarded by FCT in Portugal (<http://www.fct.pt/apoios/bolsas/valores>), the amount of the monthly maintenance allowance is € **1199.64**, being the payment method an option of the Fellow by Wire Transfer.

**Selection methods:** The selection methods will be the following: *Curriculum evaluation, individual interview*, with the respective weight of 60% and 40%, respectively. The jury will select the first five candidates for an interview, based on the curricular assessment.

**Composition of the selection Jury:** Profs. Carlos Santiago, Catarina Barata and Jacinto C. Nascimento

**Announcement/ notification of the results:** The final evaluation results will be communicated to all applicants by email.

**Deadlines and procedures of complaint and appeal.** A complaint may be lodged from the final decision within 15 working days, or an appeal to the Executive Board of IST-ID within 30 working days, both counted from the respective notification

**Application deadline and formalization:** The call is open from May 19 until June 1, 2023.

**Deadlines and procedures for prior hearing, complaint and appeal:** After communicating the provisional list with the results of the assessment, candidates have a period of 10 working days to express their opinion in the preliminary hearing of interested parties, pursuant to articles 121 and following of the Code of Administrative Procedure. The final decision will be rendered after the analysis of the statements presented during the preliminary hearing of interested parties. Regarding the final decision, a complaint may be filed with the competition Jury, or an appeal to the President of IST-ID, within 15 working days of the respective notification.

It is mandatory to formalize applications with the submission of the following documents:

i) B1 Form – Fellowship application (<https://ist-id.pt/concursos/bolsas/>);

ii) *Curriculum Vitae*;

iii) Academic degree certificate;

iv) motivation letter;

v) declaration on honour that the applicant does not exceed with this contract an accumulated period of two years in this type of studentship, continuously or with interruptions.

vi) proof of enrollment at a course that does not award an academic degree which must be presented at the time of contract signature;

Applications must be submitted to the following emails:

[ana.c.fidalgo.barata@tecnico.ulisboa.pt](mailto:ana.c.fidalgo.barata@tecnico.ulisboa.pt)

[jan@isr.tecnico.ulisboa.pt](mailto:jan@isr.tecnico.ulisboa.pt)