(BL187/2025 IST-ID)

Research Studentships Master or Integrated Master students

Applications are open for 2 Research Studentship, within the framework of projects 1801P.01516 – OptSurgAI (2024.07248.IACDC) apoiado pela medida "RE-C05-i08.M04 – "Apoiar o lançamento de um programa de projetos de I&D orientado para o desenvolvimento e implementação de sistemas avançados de cibersegurança, inteligência artificial e ciência de dados na administração pública, bem como de um programa de capacitação científica", do Plano de Recuperação e Resiliência – PRR, enquadrado no contrato de financiamento celebrado entre a Estrutura de Missão Recuperar Portugal (EMRP) e a Fundação para a Ciência e a Tecnologia I.P and 1801.P01545 – MMIST 2024.06929.RESTART financed by national funds through FCT/MCTES (PIDDAC) following conditions:

Scientific Area: Artificial Intelligence and Signal Processing

Admission Requirements: *To be enrolled at an integrated master or a master course.*

Workplan: Healthcare is moving away from an "one-treatment-fits-all" approach to a patient-centric paradigm. This requires a multi-modal view of the diseases at different levels of granularity: molecular data (e.g, genomics and proteomics) is used as predictive biomarkers; histopathology (WSI) allows the inspection of the tissues at the cellular level, making it possible to analyze their spatial heterogeneity; while imaging techniques convey information about the 2D/3D structure and the overall organ morphology.

As the interest in personalized cancer care grows, the amount of multi-modal data that is being generated creates the ideal environment to capitalize data-centric machine learning approaches. Machine learning will be pivotal in this context, as it can screen massive amounts of data and uncover new patterns faster than humans. This call opens two positions for:

1) Develop a multimodal system for predicting the prior risk and outcomes of patients subject to minimally invasive surgical procedures. This system will integrate multimodal data (pre and post-surgical clinical variables, radiology reports, and surgical videos recorded during the surgery), to predict patients' risk at different steps of their clinical journey (from pre surgery to 30 days after surgery) – 1 position.

2) Development of a multimodal integrator machine learning algorithm for patients suffering from either cancer or cardiovascular diseases, to be used in the prediction of patient risk and prognosis (e.g, 12-month survival). We seek to develop a generalist approach that works for different combinations of medical modalities (e.g, MRI and genomics or pathology and genomics) and various cancer cohorts – 1 position.

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 VisLab – Institute for Systems and Robotics, LARSyS, under the scientific supervision of Prof. Catarina Barata.

Duration: The research fellowships will have a duration of 6 months. It's expected to begin in August, 2025 and it is not renewable.

Monthly maintenance allowance: According to the values for Research Fellowships awarded by FCT in Portugal (https://www.fct.pt/fct-atualizou-o-valor-das-bolsas-para-2025/), the amount of the monthly maintenance allowance is € 1040.98, being the payment method by Wire Transfer.

Selection methods: The selection methods will be the following: *Curriculum evaluation, motivation letter, and individual interview*, with the respective weight of 70%/20%/10%.

Composition of the selection Jury: Prof. Catarina Barata, Dr. Plinio Moreno, and Dr. Carlos Santiago

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 July 29 until August 11, 2025.

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

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

i) *Curriculum Vitae*;

ii) proof of enrollment at an academic degree course (Master, Integrated Master);

iii) motivation letter, specifying if the candidate is applying to one or the two positions;

Applications must be submitted to https://isr.tecnico.ulisboa.pt/scholarships/