

1 Research Studentship for Master or Integrated Master students

Applications are open for one Research Studentship for Master students, within the framework of project **1801P.01158.1.04 LA/P/0083/2020 - ISR - SIPG LAB/ISR** and **1801P.01460.1.04 LARSYS/ISR BASE 2025-2029 – SIPG LAB/ISR**, financed by national funds through FCT/MCTES, under the following conditions:

Scientific Area: Signal Processing.

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

Workplan: This thesis aims to approximate the behavior of CNNs to that of the human visual system, with the goal of improving object's classification and detection. Based on recent literature, it is evident that CNN models with a single neural hidden layer show greater similarity to the primary visual cortex (V1) of primates and are also more robust to so-called adversarial attacks. In the context of this project, these adversarial attacks can be interpreted as the presence of lesion patterns that "disturb" the pattern of healthy tissue. Thus, the aim of this research is to develop neural networks inspired by this observation.

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://dre.pt/application/file/a/127230968>.

Workplace: The work will be developed at Instituto de Sistemas e Robótica, from Instituto Superior Técnico, under the scientific supervision of Professor Jacinto Nascimento.

Duration: The research fellowship will have a duration of 4 months. It's expected to begin in September and may eventually be renewed.

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-2026/>), the amount of the monthly maintenance allowance is € 1090.98, being the payment method an option of the Fellow by Wire Transfer/Check.

Selection methods: Curriculum evaluation (60%) and previous experience on the topics related to the grant (40%). The candidates may be invited for an interview, for additional discrimination between levels of expertise.

Composition of the selection Jury: Jacinto Nascimento, João Paulo Costeira and Manuel Marques.

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 within 30 working days, both counted from the respective notification.

Application deadline and formalization: The call is open from July 20 until July 31, 2027.

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

- i) B1 Form – Fellowship application (<https://ist-id.pt/recursos-humanos/bolseiros/#documentos-relacionados>);
- ii) *Curriculum Vitae*;
- iii) Academic degree certificate, where applicable;
- iv) proof of enrollment at an academic degree course (Master, Integrated Master)
- v) Motivation letter;

Applications must be submitted at <https://welcome.isr.tecnico.ulisboa.pt/opportunities/>



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