(BL293/2025-IST-ID)

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

Applications are open for 1 Research Studentship, within the framework of project “ATE - Aliança para a Transição Energética", Agenda 56 - Projeto C644914747-00000023, financed by the European and Resilience Plan,, under the Partnership Agreement PT2020, under the following conditions:

Scientific Area: Informatics Engineering

Admission Requirements:

a) to hold a bachelor or 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;

The candidate must also:

a) Have very good English written and oral skills.

b) Have very good knowledge of machine-learning and data science methods, especially for timeseries data

c) Have very good programming skills in programming languages such as Python.

d) Have previous research experience, particularly in the energy domain.

Workplan: The 6-month scholarship will focus on integrating and exploiting heterogeneous sensor data in buildings, namely temperature, water consumption, and electricity consumption. The work will begin with a phase dedicated to understanding the available data sources, their sampling rates, units, and reliability. This includes mapping how sensors are installed in the building, identifying missing values or faulty measurements, and applying basic cleaning and synchronization steps so that all data streams can be analysed together.

Once the data is in a consistent and usable form, the student will work on building a unified dataset that supports different types of modelling tasks. This includes creating derived features (e.g., daily profiles, peak indicators, lagged variables), aligning data with external information such as time-of-day and day-of-week, and organising the data so it can be easily reused for multiple models and experiments.

With this prepared dataset, the scholarship will then explore and prototype models to extract insights about building operation. In particular, the work will focus on tasks such as predicting building occupancy patterns from sensor signals and forecasting electricity demand at different time horizons. Simpler baseline models will be developed first, followed by more advanced approaches where relevant, always with an emphasis on understanding how the different sensors contribute to model performance.

In the final phase, the student will compare the different modelling approaches, identify which combinations of sensors and features are most informative, and document the full workflow from raw data to insights. The scholarship will conclude with a short report and a set of well-documented scripts or notebooks that can be reused in future work on building analytics and control.

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 the Interactive Technologies Institute of LARSyS, under the scientific supervision of Dr. Lucas Pereira

Duration: The research fellowship(s) will have the maximum duration of 6 months. It's expected to begin in January 2026. The fellowship 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 € 1309.64, being the payment method an option of the Fellow by Wire Transfer/Check.

Selection methods: The selection methods will be the following:

a) Curriculum Vitae evaluation (70%)

b) Motivation Letter (30%)

c) Individual Interview (as a tie-break procedure), to be conducted online

Composition of the selection Jury: Dr. Lucas Pereira (President), Prof. Hugo Morais, Prof. Augusto Esteves

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

Deadlines and procedures of complaint and appeal. After notification of the provisional list of evaluation results, candidates have a period of 10 working days to, if they wish, make a statement at a preliminary hearing of interested parties, in accordance with Articles 121 et seq. of the Code of Administrative Procedure. The final decision will be made after analyzing the statements presented at the preliminary hearing of interested parties. The final decision may be appealed to the competition jury or to the President of IST-ID within 15 working days of notification.

Application deadline and formalization: The call is open from December 24, 2025 until January 8, 2026.

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) motivation letter;
iv) academic degree certificate, where applicable;
v) proof of enrollment at a course that does not award an academic degree;
vi) 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.

Applications must be submitted to the email*: lucas.pereira@tecnico.ulisboa.pt (cc: jobs@in3.tecnico.lisboa.pt), with the subject [ATE] Application to BEDNCG*.