

Recruitment of 1 Doctorate in the field of Last mile delivery problem

The hiring process will follow what is provided in Decree-Law 57/2016, August 29, approving the Legal Framework on the Scientific Employment, hereinafter referred to as RJEC, as amended by Act No 57/2017 of 19 July by the Executory Decision No. 11-A/2017 dated 29 December by the Labour Code and by other legislation applicable to individual employment contracts, as well as the internal rules of INESC TEC, considering the specific conditions that are specified in the legal regime mentioned above for hiring doctorates under the projects financed by public funds.

SALARY LEVEL

DUTIES TO BE PERFORMED

The main objective of the work is to develop a sustainable artificial intelligence based system to solve last mile delivery problem, while considering different factors.

INESC TEC, Porto, Portugal

The work plan for the AI-Driven Optimization for Sustainable Last Mile Delivery (AIO-TacitR) project is structured around advancing solutions to the Vehicle Routing Problem (VRP) by leveraging Artificial Intelligence, Machine Learning, and Generative AI to improve sustainability and real-time adaptability in urban logistics. The project begins with foundational activities such as literature review, data collection, and preprocessing to build a robust knowledge base. It then advances to developing and refining AI models that integrate zone characteristics, traffic conditions, weather, and driver feedback. These models aim not only to reduce delivery times and operational costs but also to minimize environmental impacts, aligning with sustainability goals. The plan emphasizes iterative development, incorporating feedback loops from testing and environmental analysis to continuously improve performance.

Over the three-year timeline, the project follows a phased approach: Year 1 focuses on groundwork—research, data preparation, and initial AI model prototypes. Year 2 emphasizes refinement, prototype testing, and detailed environmental impact assessments, while Year 3 prioritizes integration of AI systems into partner logistics operations, user experience design, validation, and large-scale dissemination of results. Cross-cutting activities like project management, stakeholder engagement, and sustainability reporting ensure the alignment of research outputs with industry needs and societal goals. The structured plan ultimately seeks to bridge the gap between theoretical optimization models and real-world delivery challenges, setting a foundation for greener, more efficient, and socially responsible logistics solutions.

REQUIRED PROFILE

National, foreigner and stateless candidates holding a PhD degree in PhD in Transportation Engineering, or related scientific area, and holders of a scientific and professional curriculum showing a relevant profile for the activity to be developed can apply for the tender.

Minimum requirements: Experience in the following skill(s):

- Programming in Python, C++
 - Experience in last mile delivery projects
 - Strong foundation in machine learning, deep learning, reinforcement learning, and optimization techniques
 - Strong skills in data acquisition, preprocessing, and feature engineering
 - Background in Data Science and Data Engineering
 - Experience in developing multiple web applications
- Fluent in Portuguese and English.

Preferred qualifications: Capacity to lead sub-tasks, mentor junior team members (e.g., master's students), and coordinate interdisciplinary collaboration.

Strong written and verbal communication skills in English, enabling contributions to project reports, sustainability documentation, and dissemination activities.

Motivation to contribute not only to technical breakthroughs but also to policy, societal, and sustainability impacts, bridging research with practice.

FORMALISATION OF THE APPLICATIONS

The applications will be formalised by submitting a specific form in [INESC TEC's website](#). The form is available in the icon "Apply now".

In the same form, each candidate must upload the following documents:

- **Motivation letter:**
for the job position, addressed to the President of the Executive Commission of INESC TEC, including an activity and career development plan for a maximum period of 6 years. The description should reveal the compliance of this plan with INESC TEC's strategy (see Chapter 2 of [INESC TEC's Activity Plan](#) for 2025) and the duties to be performed and should not contain more than 2000 words and no more than 5 pages;
- **Curriculum Vitae:**
highlighting all the higher education, the scientific and technological production, the activities of crucial research, applied or based on practice, the activities of extension and dissemination of knowledge and the science management activities in the last five years, that the candidate considers more relevant or with greater impact in order to allow the corresponding relevance, quality, timeliness and adequacy.
- **Copy of certificates or diplomas degree**
- **Other documents** that you consider relevant for the evaluation of the scientific and curricular journey.

Those candidates who formalise their application incorrectly or do not fulfil the demanded requirements will be excluded from the tender.

The jury has the power to require any candidate, if in doubt, to present supporting documents for their statements. The false statements made by the candidates shall be penalised by law.

EVALUATION AND SELECTION PROCESS

The evaluation is carried out in two phases, which will result in a final classification between 0 and 100 points.

First phase: Curricular assessment

The selection is made through the evaluation of the motivation letter, which will include the activity and career development plan, and of the scientific and curricular journey, focusing on the scientific production and professional activity in the last five years that the candidate considers more relevant. This five year period may be extended by the jury, at the request of the candidate, if reasoned on suspension of the scientific activity for socially protected reasons, namely for parental leave, serious and protracted illness, and other legally protected situations of unavailability for work.

It is intended to assess the scientific and professional curriculum of the candidate focusing on the relevance, quality and timeliness of the factors referred to in Article 5 (2) (a) to (d) of the RJEC and of the motivation letter in the subject area(s) of the tender, considering the specific requirements and the adequacy for the duties to be performed.

F1 - Scientific, technological, cultural or artistic production that the candidate considers more relevant.

F2 - Activities of applied research or based on practice that the candidate considers with greater impact.

F3 - Activities of extension and dissemination of knowledge, namely in the promotion of the culture and the scientific practices that the candidate considers more relevant.

F4 - Project management activities and programmes of science, technology and innovation, or experience in observation, monitoring and evaluation of the scientific and technological system or higher education in Portugal or abroad. Included here are the activities of preparation and submission of applications for science, technology and innovation projects.

F5 - Motivation letter, including the activity and career development plan, integrated and consistent with the duties to be developed under the strategic project of INESC TEC.

The evaluation of all candidates in the first phase must be completed within a period of no more than one calendar month after the applications are received.

The candidates who have obtained less than 70 points in the average of the curricular assessments of the members of the jury will be considered not approved in absolute merit.

The top five candidates in the average of the curricular assessments that were approved in absolute merit will be qualified for the second phase, consisting of an individual interview, either face-to-face or through videoconference. The interview will weight, at most, 10% of the final classification. The candidates who don't qualify for the second phase will have a classification of 0 in the interview.

Second phase: Interview

In accordance with Article 5(5) of the RJEC, as it stands, the Jury will individually interview each candidate that were qualified to the second phase.

During the interview, the members of the Jury will stimulate an open debate about the quality and the innovative and creative nature of the research and professional activity of the candidates, considering the requirements and the subject areas of the specific tender procedure.

The interviews will be conducted within a period not exceeding 10 working days after the decision of the Jury.

FUNCTIONING OF THE JURY

Each member of the Jury will assess all the candidates in all the factors from F1 to F5 between 0 and 100 and must present the reasons for the scores attributed. Abstention is not allowed. A similar procedure will be followed regarding the candidates that are called for the interview. The candidates that are not called for an interview will have 0 points in the second phase.

The curricular assessment (CA) of each candidate is obtained according to the average of the factors (F) that is evaluated by the weights of the following formulation, expressed to the first decimal.

$$AC = F1*25 + F2*20 + F3*20 + F4*15 + F5*20$$

The final classification (FC) of each candidate is obtained according to the average of the final results of the curricular assessment and of the interview (I) that is evaluated by the weights of the following formulation, expressed to the units.

$$CF = AC*90 + E*10$$

After completing the application of the selection criteria, each member of the Jury will sort the candidates according to the final classification assigned to them. Based on this sorting, the Jury will sort the candidates by successive clearance to the first place and following places (each member of the jury follows their personal sorting). The clearance is carried out when a candidate obtains more than half of the votes. If this doesn't happen in the first voting for a particular place, the least voted candidate is eliminated and the procedure is repeated with the remaining candidates (with tiebreakers based on the average of the final classifications).

The Jury will advise the hiring of the candidate approved in absolute merit sorted in the first place.

A minute is drawn up after the jury's meetings, containing a summary of what has arisen from them, as well as the assessments made by each one of the members and their reasons, and shall be made available on request to the candidates.

DISABILITY INCENTIVE

Candidates who present a degree of disability equal to or greater than 90% will benefit from an incentive (20) in the score of the CV Assessment.

Candidates who present a degree of disability equal to or greater than 60% and less than 90% will also benefit from an incentive (10) in the score of the CV Assessment.

Said score may, in these cases, exceed 100 points.

Candidates must demonstrate the degree of disability during the application, namely through the submission of the Multi-Purpose Medical Certificate of Disability, issued in accordance with Decree-Law no. 202/96, of October 23 - currently in effect.

Candidates must declare, in the application form, the type of disability used throughout the selection process, in order to proceed with the required adaptations.

SELECTION JURY

In accordance with article 13 of RJEC, the jury is composed of the following members:

President of the Jury: António Galvão Ramos

Full Member: Manuel Pereira Lopes

Full Member: Carlos Ferreira

Substitute Member: António Henrique Almeida

Substitute Member:

APPLICATION PERIOD

Application period: From 2025-10-16 to 2025-10-29

NOTIFICATION OF THE RESULTS, PRIOR HEARING AND FINAL DECISION OF THE RESULTS

The results of the selection process will be disclosed to the candidates by email.

After being notified, the candidates have 10 working days to comment on the results of the selection process under their right to a prior hearing. The final decision of the jury will be given within 10 days from the deadline for the decision under the right to a prior hearing.

The present tender is exclusively for occupying the indicated vacancy, expiring once the position is filled.

NON-DISCRIMINATION AND EQUAL ACCESS POLICY

INESC TEC actively promotes a policy of non-discrimination and equal access, so that no candidate can be privileged, benefited, harmed or deprived of any right or exempted from any duty, on basis of origin, age, sex, sexual orientation, marital status, family situation, economic situation, education, social origin or condition, genetic heritage, reduced capacity for work, disability, chronic illness, nationality, ethnic origin or race, region of origin, language, religion, political or ideological convictions and trade union membership.

The candidate with a disability has preference under conditions of equal classification. Candidates must declare on the application form, under word of honour, the respective degree of incapacity, the type of disability and the means of communication to be used in the selection process, in accordance with the abovementioned diploma.

The Executive Commission of INESC TEC approved this job advertisement in the meeting of 2025-10-15, also being responsible for the final decision on hiring.

