

INESC TEC | Research Grant (AE2025-0009)  
INESC TEC

Direct Link: <https://www.AcademicKeys.com/r?job=251811>

Downloaded On: Jan. 20, 2025 10:52am

Posted Jan. 17, 2025, set to expire May 19, 2025

<b>Job Title</b>	INESC TEC   Research Grant (AE2025-0009)
<b>Department</b>	CTM
<b>Institution</b>	INESC TEC PORTO, , Portugal
<b>Date Posted</b>	Jan. 17, 2025
<b>Application Deadline</b>	Jan. 29, 2025
<b>Position Start Date</b>	Jan. 16, 2025
<b>Job Categories</b>	Graduate Student
<b>Academic Field(s)</b>	Engineering - Other
<b>Apply Online Here</b>	<a href="https://www.inesctec.pt/en/form/notice/5259">https://www.inesctec.pt/en/form/notice/5259</a>
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<b>Job Description</b>	

Research Opportunities

**Computational Learning**

**Work description**

Breast conservative therapies have been allowing many women with breast cancer to avoid a mastectomy. Nevertheless, there are many scenarios where the latter is still conducted. Fortunately, breast reconstruction allows to alleviate the loss of the breast(s) either by making use of an implant or tissue from the body of the patient. Among the autologous options, the DIEP flap is nowadays considered the state-of-the-art. This technique gets its name after the designation of the blood vessel

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tree that exists in the lower and anterior portion of the abdomen, the Deep Inferior Epigastric Perforator vessels.

This is due to the crucial role that these blood vessels play in this procedure, since they are extracted among the tissue and must ensure proper vascularization of the new breast. When a patient shows interest in this type of reconstruction, the surgical team requests a Computer Tomographic Angiography (CTA) or Magnetic Resonance Angiography (MRA). The radiology team acquires the scans and detects the DIEP vessels. In the end, a report with a description of every perforator that was found (variable but usually around 6-8) is delivered to the surgeons, such that they may determine whether the patient is eligible for the procedure, and in case she is, they may plan which vessels will include in the flap and how it will be collected. This process is very challenging for the radiological team, mainly because these blood vessels are very small (cross section of 1-2 pixels most of the time).

The objective of this work is to investigate computer vision/machine learning techniques which can achieve a larger automation of the process of segmentation without significantly lowering its accuracy.

### **Academic Qualifications**

- Master's degree in Electrical Engineering, Computer Science, Bioengineering or similar

### **Minimum profile required**

- Experience in Computer Vision and machine learning.

### **Preference factors**

- Experience in research projects.

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**Maintenance stipend:** € 1259,64, according to the table of monthly maintenance stipend for FCT grants , paid via bank transfer. Grant holders may be awarded potential supplements, according to a quarterly evaluation process (Articles 19, 21 and 22 of the Regulations for Grants of INESC TEC and Annex II), up to a maximum limit of 50% of the monthly maintenance stipend.

INESC TEC supports costs with registration, enrolment or tuition fees, during the grant duration, under the terms established in the internal document: "Payment of Tuition fees to grant holders".

The grant holder will benefit from health insurance, supported by INESC TEC.

### Application Period

Since 16 Jan 2025 to 29 Jan 2025

### Centre

Telecommunications and Multimedia

### Scientific Advisor

[Hélder Filipe Oliveira](#)

### What we offer

- **Multicultural and collaborative environment**
- A multicultural, international and collaborative environment that makes it easier to exchange ideas, work in networks and create synergies.

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- **International projects**
- The possibility of working in international projects with some of the most important companies in the field.
- **Mentoring**
- Mentoring with the best researchers in the fields of electrical and industrial engineering, bioengineering, information technology and physics.
- **Self Improvement**
- The possibility of participating in international conferences, workshops, seminars and vocational training.
- **Other Benefits and Perks**
- Flexible working time, health insurance, discounts in hotels, transportation, etc.
- **Informal Events**
- Annual informal events, such as the multicultural party.

For more information: [Click Here](#)

### Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

### Contact

Portugal

**Contact E-mail**    rh@inesctec.pt