



Courtesy translation of D.R. n. 181/2023

*For more details on the selection process, please refer to the Italian version of D.R. n. 181/2023 available at <http://www.hunimed.eu/it/lavora-con-noi/>*

**SELECTION PROCEDURE FOR RESEARCH FELLOWSHIPS**

Research Program Title	<b>PRIN Project 2022: Development and validation of an artificial intelligence algorithm based on clinical and radiographic data for the "virtual follow-up" of patients with total hip arthroplasty.</b>
Tutor	Dr. Mattia LOPPINI
Scientific Areas	05 – Biological Sciences 06 – Medical Sciences
Gross amount of the fellowship	20.000,00 Euro
Duration of the fellowship	23
Objectives of the research	<p>'The use of Artificial Intelligence (AI), particularly the Deep Learning (DL) approach, to perform the automatic evaluation of X-ray imaging for monitoring patients with hip arthroplasties could enhance the diagnostic accuracy for THA failure. The aim of this project is to examine the reproducibility and sensitivity of the decision-making process based on the analysis of radiographs, patient's features, and follow-up clinical questionnaires performed by means of AI compared with the analysis performed by the orthopedic surgeon in the clinic, in terms of ability to identify symptomatic patients with THA and non-pathological radiological findings or asymptomatic subjects with pathological radiological signs related with the prosthesis that therefore require a tighter follow-up program or revision surgery.</p> <p>SPECIFIC AIMS</p> <p>AIM 1: Development of AI algorithms to be implemented in a software that allows for automated operator-independent analysis and classification of radiographic images, patient's</p>

	<p>features and clinical data derived from questionnaires during the follow-up of patients with THA.</p> <p>AIM 2: Validation of the diagnostic capability of the software in the detection of clinical and/or radiological pathological elements associated with THA.</p>
Activities to be carried out	<ul style="list-style-type: none"> <li>• Reporting X-ray of patients with hip and knee prostheses: the candidate, with the support of the principal investigator, will mainly be responsible for analyzing hip and knee X-ray;</li> <li>• Study data collection and electronic CRF compilation.</li> </ul>
Work place	PIEVE EMANUELE - Milan
Mandatory requirements	<ul style="list-style-type: none"> <li>• Master's degree in Medicine and Surgery;</li> <li>• Degree in biology;</li> <li>• Adequate scientific and professional background to carry out the research activity described in this call.</li> </ul>
Selection process	<p>Application for admissions must be submitted at the following link:</p> <p><a href="https://pica.cineca.it/humanitas">https://pica.cineca.it/humanitas</a></p> <p>No hard copy of the application must be sent by post.</p> <p>At first access, applicants need to register by clicking on "Register" and completing the requested data.</p> <p>If applicants already have LOGINMIUR credentials, they do not need to register again. They must access with their LOGINMIUR username and password in the relevant field LOGINMIUR.</p> <p>Applicants must enter all data necessary to produce the application and attach the required documents in PDF format.</p>
Selection criteria	<p>Selection criteria are predetermined by the Selection Committee. As part of the selection process, the Committee will evaluate the curriculum, titles and publications presented by the candidate and will consider, in particular:</p> <ul style="list-style-type: none"> <li>• knowledge of the English language,</li> <li>• basic orthopedic knowledge,</li> <li>• basic knowledge of clinical studies,</li> </ul>

	<ul style="list-style-type: none"><li>• knowledge of Word, Excel etc..</li></ul>
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**FURTHER INFORMATION:**

In the event of any conflict between Job Opening text and Italian D.R. text, the Italian version will prevail.

For more details on the selection process please refer to the **D.R. n. 181/2023** (<http://www.hunimed.eu/it/lavora-con-noi/>) or send an inquiry to [ufficiodocenti@hunimed.eu](mailto:ufficiodocenti@hunimed.eu) or telephone +39 02.8224.5642/5421.