DEPARTMENT OF INFORMATICS

NOVA LABORATORY FOR COMPUTER SCIENCE AND INFORMATICS (NOVA-LINCS)
Pos-Doc Research Grant (BIPD) - 1 Vacancy

19 of September of 2023

A call for tenders is open for 1 Scholarship Pos-Doc Research Grant within the scope of the project 'Financiamento de Unidade de Investigação', Reference: UIDP/04516/2020 ('NOVA LINCS: Financiamento PROGRAMÁTICO 2020-2023'), co-financed by 'Fundação para Ciência e a Tecnologia', under the following conditions:

Scientific area: Informatics

Admission requirements:

- PhD in Computer Science or similar
- Knowledge in Computer Vision and Deep Learning, as a preferred factor
- Knowledge of Natural Language Processing Tools and OWL Ontologies / Graph-oriented Databases, as a preferred factor

Regarding the "BIPD" (postdoctoral scholarship), in terms of the requirements to be verified for their attribution (article 7 of the FCT Research Grant Regulation no. 950/2019) the need for a doctoral degree to have been obtained in the 3 years prior to the date of submission of the application to the scholarship and, in terms of its execution, the fact that it can only be renewed for a maximum period of 3 years.

Work plan:

1. Conduct a comprehensive literature review on OCR (Optical Character Recognition) techniques, with a specific focus on handwritten text recognition. Get familiar with the existing state-of-the-art OCR algorithms and methodologies, including both traditional and deep learning-based approaches. Identify and acquire suitable datasets containing handwritten text samples and corresponding ground truth for training and evaluation. Preprocess the datasets, which may include normalization, noise removal, resizing, etc., to ensure compatibility with the chosen OCR techniques.
2. Explore and implement various OCR techniques for handwritten text recognition. Experiment with traditional OCR methods such as feature extraction, template matching, and machine learning algorithms. Additionally, explore the application of deep learning-based OCR approaches, such as convolutional neural networks (CNNs) or recurrent neural networks (RNNs) based, to leverage their ability to capture complex patterns and contextual information. Train and fine-tune the OCR models using the acquired dataset, and evaluate their performance using appropriate metrics.

3. Create a dataset which we'll call the "Passports Requisitions Dataset from Portuguese Archives", by collecting and preparing images from "Torre do Tombo".
4. Focus on enhancing the OCR models and addressing their limitations. Experiment with different preprocessing techniques and explore the combination of multiple OCR approaches to leverage their complementary strengths. Apply the developed OCR methods to the "Passports Requisitions Dataset from Portuguese Archives" for evaluating their performance through the analysis of the tests conducted. Compare the outcomes with existing state-of-the-art OCR methods.
5. Prepare a final report in which the experience is described.
6. Participate in the writing of a scientific article for submission to a scientific conference.

Applicable legislation and regulations: The granting of the Research Scholarship will be carried out upon the signing of a contract between the University of Évora and the scholarship holder, as set in the template former.fct.pt/apoios/Minuta_Contrato_Bolsa.docx , pursuant to the Research Scholarship Statute (Law No. 40/2004 of August 18 and Decree-Law No. 123/2019 of August 28) and in accordance with the legislation and Regulation of Research Grants of the Foundation for Science and Technology, IP in force, regulation nº950/2019 of December 16, 2019: https://files.dre.pt/2s/2019/12/241000000/0009100105.pdf and other applicable rules.

Place of work: The work will be developed at the Research Centre NOVA LINCS of the University of Évora, under the scientific guidance of the Profs. António Anjos, Dora Melo e Irene Pimenta Rodrigues.

Duration of the scholarship(s): The scholarship will have a duration of 6 months, starting on December of 2023. The scholarship contract may be renewed for a maximum of 6 months or until the end of the funding project's budget allocation.

Amount of monthly maintenance allowance: The amount of the scholarship corresponds to 1741€, according to the table of scholarships awarded directly by FCT, I.P. in Portugal (https://www.fct.pt/wp-content/uploads/2023/02/Tabela-de-Valores-SMM_2023.pdf), payments being made monthly, by check or bank transfer.

Selection methods: The selection methods to be used will be the following:

- Curriculum evaluation (50%)
- Adequacy of training to the work plan (20%)
- Interview (30%)

Composition of the Selection Jury:

President: Professor Irene Pimenta Rodrigues
1st effective member – Professor António Anjos
2nd effective member – Professor Dora Melo
1st alternate member – Professor Salvador Pinto Abreu
2nd alternate member - Professor Francisco Manuel Gonçalves Coelho

Advertising/notification of results: The final results of the evaluation will be publicized, through an alphabetically ordered list posted in a visible and public place Department of Informatics of University of Évora, being the approved candidates notified through email.

To ensure the right of prior hearing of interested parties, the Final Classification project will be announced by any written means to all interested parties.

After communicating the provisional list of the results of the evaluation, candidates have a period of 10 working days to express their opinion in a preliminary hearing of interested parties.

Application deadline and submission of applications: The tender is open from 27 of September to 12 of October of 2023 and the results of the selection will be published by 16 of October of 2023.

Applications must be formalized, obligatorily, by sending an application letter with the following documents: Curriculum Vitae and other supporting documents considered relevant.

For the purposes of application, the evidence may be replaced by a declaration of honor signed by the candidate, but the failure to demonstrate that evidence, in the contracting phase, possession of the required degree on the deadline for application or the non-presentation of proof of enrollment in the study cycle or non-degree course, for scholarships with this component, imply the cancellation of the candidate's application.

Academic degrees obtained in foreign countries require registration by a Portuguese Institution in accordance with Decree-Law no. 66/2018, of August 16 and Ordinance No. 33/2019, of January 25th.

The presentation of the certificate is mandatory for the signing of the contract. More information can be obtained at: https://www.dges.gov.pt/pt/pagina/recognition?plid=374

Applications must be sent by email to:

Prof. Doutor Irene Pimenta Rodrigues
Departamento de Informática, da Universidade de Évora
e-mail: ipr@uevora.pt