Job offer

ID Document verification

***Duration**: 24 months*
***Desired hiring date**: ASAP (may be modified according to the sanitary situation)*
***Take-home salary**: 2600 € / month (French public healthcare coverage included)*
***Workplace**: the L3i laboratory in La Rochelle, France*
***Specialities**: Machine Learning / Image Analysis / Computer Vision*

Description of the Project:

The work carried out by the candidate will be part of a joint project between the L3i laboratory and IMDS company. This project is funded by the “Plan de Relance” from France and European Union.

The Post Doc fellow will be based in the L3i Laboratory, located La Rochelle, France.

The L3i laboratory, created in 1993 at La Rochelle University brings together researchers in Computer Science and Signal Processing from different faculties. The L3i brings together the skills of its researchers in order to address the issues of digital content enhancement from a systemic perspective. This relies, in particular, on a cross exploitation of interactive applications, content indexing and knowledge representation. The laboratory is structured around three scientific themes (Knowledge Engineering, Content Analysis and Management, Interactivity and Dynamic Systems), centered on the common goal of interactive and intelligent management of digital content.

The mission of the job will also be conducted in coordination with IMDS, present in France and Canada.

IMDS offers a complete range of services, from consulting to operational validation, including software and hardware prescription, technology deployment, staff training and solution operation. Based on the innovative concept of the "Advanced Document", IMDS develops production architectures that cover the entire document life cycle, from the application data to the physical or electronic distribution of the document produced.

Job description:

The work of the postdoc fellow will fall within the framework of the area "ID document verification". The aim is to design innovative approaches for the verification of the validity of ID Documents captures (ID Card, driving licence, passport, others) in an authentification context while a distant digital relationship (connection to a bank or administrative service for instance). One of the common methods in detecting ID Document forgery is based on the Machine Readable Zone (MRZ) is presented in [Kwon2007] and [Hartl2015]. Others methods focuses on checking the structure and graphic elements, i.e verifying the presence, position and appearance of the elements as they are

expected on the document. The implementation of these control points requires above all the precise positioning of the information and being able to detect, despite differences in quality (resolution, colors, sharpness, etc.), the different elements of the document: passport photo, each line of text, table, logo, etc.This post-doctoral work will be based on a detailed state of the art of existing approaches, to identify their limits and propose innovative approaches that will help to overcome the bottlenecks mentioned above. Another part of the work would also rely on using modern machine learning and computer vision to take benefits of specific security features that are embedded while the edition of ID documents. The features are designed and developed to secure a document (specific ink, watermarks, fluorescent fibers). Actually, all these features are among the best elements allowing to certify the authenticity of a document since they greatly complicate the falsification, have important implementation costs and cannot be scanned with a faithful restitution.

Candidate Profile:

The candidate, who holds a Ph.D. in the fields of computer science, computer engineering, signal processing, or applied mathematics, must have a significant research experience in at least two of the following areas:

- Machine learning
- Pattern recognition
- Computer Vision OR image processing (knowledge and/or experience in both domains would be considered a plus for the applicant)

The candidate's skills will include:

- Mastering one or more programming languages (Java, Python, C/C++...)
- Very good teamwork skills, having knowledge or experience of Agile methods would be a plus (the work will be carried out both in conjunction with researchers from the L3i laboratory and the R&D department of the IMDS company)
- Good scientific writing skills, and fluency in writing and speaking English

To apply:

Candidates for this position should send a CV and a cover letter (names and reference details would be appreciated) to:

nicolas.sidere@univ-lr.fr

mickael.coustaty@univ-lr.fr

acornu@imds-world.com

Applications will be considered as they arise and will be closed by the 13th of April

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