



Job offer



Quality assessment and improvement on ID Documents mobile capture.

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 Lab:

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), centred 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 post-doc fellow will fall within the framework of the area "Control and assessment of a capture quality". The aim is to design innovative approaches for the evaluation and the increase of the quality of ID Documents captures (ID Card, driving licence, passport, others) in order to improve the verification of the validity of the document in an

authentication context while a distant digital relationship (connection to a bank or administrative service for instance). Where recent mobile devices already perform correct image processing on photos in general, it is less the case when capturing documents in deteriorate conditions (movement, lack of light). More, the required quality of the capture is higher than standard when the aim is to control the veracity of the document. There are many scientific bottlenecks arising from this applicative context, mainly in the field of machine learning and pattern recognition. Using video capture seems to be a promising solution to address glare issues and secure the authentication process

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. To solve these problems, we plan to propose new techniques. For instance, many quality assessment focuses on simple criteria such as read rates. It seems important to take into account the constraints and results of additional more advanced controls like textures or graphics. A competition of all approaches (deep-learning or not) should be developed to fit some real world constraint like time processing and capacity to run on mobile.

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