Type d'offre : Laboratory offer

Post date : 26.11.24

IBISC Laboratory (Évry Univ.)

Internship offer l AI SOlution for Non-DEstructive Ultrasonic Testing of Critical Systems (SONDES)

Informations générales

Contract type : Stage

Contract length : 6 months

Contact :
Thomas SENDRA / **Vincent VIGNERON**

Starting date : Sat 01/02/2025 - 12:00

Trade : Technicien

Topic : Analyse et traitement d'images

IBISC Laboratory (Évry Univ.) :

The [IBISC Laboratory](#) (Informatique, Bioinformatique, Systèmes Complexes EA 4526) is a laboratory of the University of Evry Paris-Saclay, structured into four research teams: AROBAS, COSMO, IRA2 and SIAM. A particular feature of the laboratory is its multi-disciplinary research and its location on two university sites: IBGBI and PELVOUX. This specificity is also reinforced by its attachment to two distinct scientific departments: Sciences Fondamentales et Applications (SFA) and Science et Technologie (ST). The IBISC laboratory is resolutely developing a strategy of collaboration and valorization of research with industry, as well as a research strategy open to the international arena. In 2023, the IBISC laboratory welcomed 23% of the UEVE's teaching and research staff, who hold a number of responsibilities at both the University of Evry (LMD, UFRs, IUT, VPs) and the University of Paris-Saclay (Graduate schools in Computer Science and Digital Sciences (ISN) and Engineering and Systems Sciences (SIS)).

Détail de l'offre (poste, mission, profil) :

Context

Ultrasound is used for non-destructive testing (NDT) of industrial parts without damaging their integrity. This involves emitting acoustic waves and detecting their interaction with defects present in the part. The re-emitted waves (echo) are then converted, in real time, into a digital image of the defect thus located and characterized.This internship concerns the identification by deep neural network of possible defects on fasteners of a critical system. The identification of these defects will be based in particular on several ultrasonic (multimodal) measurements, carried out in situ by maintenance teams at various industrial partner sites. A promising approach is to first estimate the quality of an acquisition, as many factors can directly lead to poor analysis when it comes to determining the presence or absence of a defect, or render the acquisition uninformative for this task.

Objectives

The (SMART) objectives of this study are as follows:

1. (main): to be able to automatically detect, in an unsupervised way, acquisitions of poor quality;

2. to compare the results to make them consistent with those of experts;

3. to improve existing models for supervised estimation of acquisition quality.

Profile & Skills required

The person recruited will be in his/her 3rd year of engineering school or Master's degree. He/she will be able to understand and develop and/or adapt learning algorithms in an industrial context, index them and use them in an operational system to carry out the mission described above.

URL de l'offre : https://www.dataia.eu/sites/default/files/Stage_IBISC_2025.pdf

Lien vers l'offre sur le site dataia.eu :https://da-cor-dev.peppercube.org/node/1167