Type d'offre : Laboratory offer

Post date : 29.11.24

IBISC Laboratory (Évry Univ.)

M2 Internship subject | Use of thyroid scintigraphy with iodine 123 and generative AI

Informations générales

Contract type : Stage

Contract length : 6 months

Education level : Master 2

Contact :

Vincent Vigneron
Hichem Maaref

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 & Objectives

Nuclear medicine, and in particular thyroid scintigraphy, plays an essential role in the diagnosis and treatment of thyroid disorders such as hyperthyroidism. Iodine 123 (I123), used for thyroid scintigraphy, enables us to assess the thyroid's uptake capacity, a fundamental step in prescribing appropriate iodine 131 (I131) treatment. However, precise segmentation of the thyroid and quantification of uptake remain critical steps requiring advanced methods for optimal treatment personalization. This internship proposes to explore the integration of artificial intelligence models to improve thyroid segmentation from hybrid SPECT/CT images. AI will be used to generate accurate segmentations of the thyroid gland, offering automated quantification of iodine uptake. The ultimate goal is to develop a predictive model which, from just one or two examinations, would enable us to estimate the thyroid's uptake capacity in order to optimally adjust the I-131 dose.

Profile & Skills required

- Knowledge of nuclear medicine and thyroid pathophysiology;

- Experience in medical image processing (SPECT/CT) and familiarity with segmentation tools;

- Skills in artificial intelligence, particularly in the field of computer vision (deep learning, generative networks);

- Proficiency in programming languages such as Python and AI libraries (TensorFlow, PyTorch).

URL de l'offre :

https://www.dataia.eu/sites/default/files/24-11-15-medecineNucleaire.pdf

Lien vers l'offre sur le site dataia.eu :https://da-cor-dev.peppercube.org/node/1172