De: **Nicolas Papadakis** nicolas.papadakis@u-bordeaux.fr
Objet: [gdr-mia] Stage M2 Bordeaux : Segmentation en Imagerie Médicale
Date: 13 octobre 2021 à 11:00
À: gdr-mia@listes.math.cnrs.fr

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Bonjour,

Voici une offre de stage de Master 2 au Laboratoire d'Informatique de Bordeaux

Bonne journée,
Nicolas

Training period: 4-6 months in 2022 (Feb-June)

Location: LaBRI, UMR 5800, Université de Bordeaux

Subject:
While medical imaging is now an integral part of clinical practice, the quantitative analysis of images produced is a major problem.
The mass of data generated increases every day while the manual analysis of medical images is long and tedious.
At the time of BigData and Cloud Computing, it is important to offer robust and accurate methods to automatically extract useful information from medical images.
In this project, the candidates will focus on tumor segmentation based on CNN. To this end, She/He will integrate shape prior into the loss function to improve segmentation results.

Objectives of the project:
- To propose a review of current DL methods applied to tumor segmentation
- To implement some of them, especially top-ranked methods in the BRATS challenge (http://www.braintumorsegmentation.org)
- To propose improvements of the studied DL methods using shape priors
- To validate the proposed method on provided datasets

Candidate:
The candidate (diploma of engineering school or Master 2) should be a specialist in deep learning and machine learning.
She/He will have skills in image processing and programming.
Interest in medical imaging is a plus. A good experience of Python, Keras, Pytorch and tensorflow is recommended. A good English reading/writing is also a key element.

Application:
To apply, send a file containing CV, list of publications (if possible), motivation letter, transcripts of diploma, defense report (if possible) as well as any documents likely to strengthen the application.

Supervisors:
- Pierrick Coupé / LaBRI UMR 5800 / PICTURA (pierrick.coupe@labri.fr)
- Nicolas Papadakis / IMB / UMR 5251(nicolas.papadakis@math.u-bordeaux.fr)
- Baudouin de Senneville / IMB / UMR 5251 (baudouin.denisdesenneville@math.u-bordeaux.fr)

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