**Histopathic cancer detection using CNN model**

**Objective :**

Image segmentation using CNN model of the images of cancerous development into human cells.

**Mission statement :**

* ●  Use the provided dataset to segment.
* ●  Define your modelisation strategy.
* ●  Use the framework of your choice .

**Dataset :**

●  Using Kaggle dataset([link](https://www.kaggle.com/competitions/histopathologic-cancer-detection/data))

**Resources:**

●  Potentially useful libraries:

* + ○  Image Segmentation Keras
  + ○  Segmentation models

●  Blogs:

* + ○  A detailed example of how to use data generators with Keras
  + ○  A Beginner's guide to Deep Learning based Semantic Segmentation

using Keras

* + ○  Image Segmentation using Python’s scikit-image module

● **A notebook** (html or ipynb) :

* ○  Introduction
* ○  Dataset loading
* ○  Data exploration
* ○  Preprocessing
* ○  Modelization
* ○  Performances evaluation
* ○  Conclusion

**● BONUS:**

* ○  Script: an API capable of taking an image as input and output the predicted mask.
* ○  Dashboard: a GUI capable of calling your API and showing the input image and the predicted mask.

**Evaluation criterias (120 / 100 pts) :**

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| --- | --- | --- |
| **Skill** | **Description** | **Points** |
| **Introduction** | * ●  Using at least 3 different resources (kaggle notebooks, blogs, youtube videos or else...), explain your strategy and why you think this is going to work. * ●  Bibliographical references are present. | 20 |
| **Preprocessing** | ● Describe the steps and usefulness of your image pre-processing. | 10 |
| **Modelization** | ● How does your model work and why do you think it is interesting for this dataset modelisation? | 20 |
| **Performances** | * ●  A baseline is defined. * ●  All necessary comparisons are done. * ●  Figures are readable and legends are present. * ●  The number of points for this criteria is weighted   by your model performances. | 50 |
| **Application (bonus)** | ● The script (API) and the dashboard are functional. | 20 |