MACHINE LEARNING - PROJECT

Skin Cancer - Skin Cancer Detection and Interpretation

Dataset - https://challenge2020.isic-archive.com/

REQUIREMENTS -

1. Collect data and conduct data analysis. Visual reports.

2. Evaluate Classification Models (Decision Trees, Random Forests, Linear Regression) with Deep Learning Models (CNN, RNN etc) and based on the outcome Design and implement one or more deep learning systems, experiment with various algorithms to maximise the learning capability. Evaluate the performance and document findings.

3. Cost functions should be carefully thought through and justified.

4. Image segmentation or object detection can be carried out to extract the pathological regions for refined detection and analysis.

5. Evaluate if addition or integration of demographic information such as age, ethnic groups, gender etc. may give better prediction.

6. Explore unsupervised learning on large unlabelled data.

7. Fine tuning on limited source of pathological data.

8. Deliverables -
    - A Separate or Single Notebook Program covering all the above.
    - A report that documents the above findings.