# Classification of Skin Moles into Benign and Malignant.

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**Dataset:-** https://www.kaggle.com/code/matthewjansen/skin-cancer-classification-with-transfer-learning/data is a balanced dataset of images of benign skin moles and malignant skin moles. The images are a subset from the International Skin Imaging Collaboration (ISIC).

**Idea:-**

- Trying to figure out the algorithms used in the past and to design a better algorithm seeing skin moles whether its cancer or not.
- We will focus more on the ABCD rule:Asymmetry, Border, Color and Dermoscopic Structures.

**Research method:-**

Pre-processing → Segmentation → Feature extraction → Classification → Cancer, Not Cancer

**Algorithms:-**

1. KNN(K-NEAREST NEIGHBOUR)
2. SVM(SUPPORT VECTOR MACHINE)
3. ANN(ARTIFICIAL NEURAL NETWORK)

**Motivation:-**

Melanoma has been an illness of public concern due to the rapid increase.We want to use a machine learning algorithm that identifies malignant lesion patterns and suggests that the person go immediately to a specialist, because, so that it can be diagnosed early, the chance of surviving is about 95%..Besides, automatic diagnosis has shown to overcome dermatologists when recognizing either malignant and benignant lesions or a particular type of lesion

**What to do by midway:-**

We want to implement all the techniques used in our references and use these as a baseline and try to improve the accuracy.(especially in challenging situations).

**Expectations:-**

Achieve an accuracy of 90+ % in all scenarios.

**References:-**

- Hurtado, J., &amp; Reales, F. (2021). A machine learning approach for the recognition of melanoma skin cancer on macroscopic images. TELKOMNIKA (Telecommunication Computing Electronics and Control), 19(4), 1357. https://doi.org/10.12928/telkomnika.v19i4.20292
- Sanchez, Z., Alva, A., Zimic, M., &amp; Carpio, C. del. (2021). An algorithm for characterizing skin moles using image processing and machine learning. International Journal of Electrical and Computer Engineering (IJECE), 11(4), 3539. https://doi.org/10.11591/ijece.v11i4.pp3539-3550