Title

Identifying Skin Cancer: Detection Using CNNs

Group Members

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What problem will be investigated, and why is it interesting?

Portugal has a hot climate and extensive beach culture, leading to high sun exposure, which significantly increases the risk of skin cancer (https://www.ipolisboa.min-saude.pt/noticias/cancro-da-pele-e-dos-mais-frequentes-em-portugal/).

Early detection is crucial, as it greatly improves the chances of successful treatment while reducing long-term damage and increasing survival rates (https://www.cas.org/resources/cas-insights/how-biomarkers-unlock-faster-cancer-detection-improving).

What sources will be reviewed to provide context and background?

We will review medical research papers and scientific literature on the application of deep learning, specifically convolutional neural networks (CNNs).

What data will be used? If new data is collected, how will it be gathered?

We will use large publicly available image datasets, such as the ISIC Archive and HAM10000 datasets.

What method or algorithm will be used?

The proposed method will be based on convolutional neural networks (CNNs) for binary image classification (benign vs malignant).

If existing implementations are available, will they be utilized, and how?

Existing implementations from popular frameworks such as PyTorch or TensorFlow can be used. The process will involve loading pre-trained CNN architectures and fine-tuning the model using the datasets mentioned above.