

Detect Early Melanoma Cancer Using Machine Learning

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Melanoma is a type of skin cancer that originates in melanocytes, the pigment-producing cells, and is known for its potential to metastasize and become life-threatening if not detected and treated early. This project focuses on applying machine learning for early melanoma detection, surpassing traditional manual diagnostic methods more efficiently and effectively. Using a dataset of more than ten thousand dermoscopic images, the final model intends to accurately identify subtle patterns indicative of early-stage melanoma. The model is trained on diverse datasets, encompassing benign and malignant cases, and by deep learning architectures from PyTorch to enhance comprehensiveness. The final model consistently evaluates melanoma from unseen images with a best average accuracy of 90.03%, peaking at 91.20% compared to trained dermatologist's visual diagnosis ranging from 70% to 80%.