

Image-Based Non-invasive Jaundice diagnosis using CNN and XGBoost Classifier

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Abstract: Jaundice causes yellowing of the skin and eye due to high bilirubin levels, and early detection is needed to prevent complications and save the life. Traditional methods involve blood testing which consumes more time and invisible. This proposed technique involves Image processing and Machine learning techniques to detect jaundice in non-invasive way. It captures facial images and under controlled lightning, applied preprocessing techniques like color normalization and contrast enhancement, and extracts features like skin tone and eye color using color space transformation (RGB). A Machine learning model trained on jaundiced and non-jaundiced individuals classifies the presence and severity of jaundice. ML algorithm Convolution Neural Networks (CNNs) evaluate accuracy. This method achieves high sensitivity and specificity, offering a promising alternative to traditional diagnostic techniques, especially for rural healthcare settings and telemedicine application.

Keywords: Jaundice, bilirubin, preprocessing, CNN, healthcare.

