

UNIVERSITI TEKNOLOGI MARA

**SKIN BURN DEGREE DETECTION USING
CONVOLUTIONAL NEURAL NETWORK**

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ABSTRACT

This project aims on the development of a Skin Burn Degree Detection system utilizing Convolutional Neural Network (CNN) algorithms. The background underscores the critical importance of early detection and treatment for skin burns to mitigate potential complications. Addressing the existing gap of an accurate and efficient system for skin burn degree detection, the project aims to design and implement a CNN-based system with the capacity to precisely detect and classify different burn degrees. The methodology encompasses essential phases, including requirements gathering, design, implementation, testing, and evaluation. Through rigorous evaluation, the results demonstrate significant improvements in the system's overall performance over an extended training period of 300 epochs. Precision increases from 82.7% to 85.4%, and recall improves from 77.1% to 82.2%, indicating enhanced accuracy in classifying burn severity. The mean Average Precision (mAP) at IoU 0.5 exhibits notable advancement, rising from 79.7% to 83.5%, reflecting a more robust performance in object detection. Particularly, the mAP at IoU 0.5 to 0.95 experiences a substantial boost, ascending from 52.8% to 64.5%, indicating improved precision across a range of intersection-over-union thresholds. The conclusion underscores the significance of the proposed system, providing an accurate and efficient means for skin burn degree detection that holds immense potential for early diagnosis and treatment. This project contributes to the field of computer science by offering a practical application of the CNN algorithm within the healthcare industry. The improved performance metrics affirm the system's effectiveness and underscore its potential impact on advancing skin burn severity assessment.

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