

Color coding:

MAIN HEADINGS

SUB HEADINGS

Content to be included

(instructions)

*****DOCUMENT STARTS*****

1. Introduction

1. Introduction (About Skin Cancer)
2. Problem Statement
3. Objectives (Outcomes)
 - Dermatological Diagnosis
 - Importance of Early Detection
 - Challenges in Multiclass Lesion Analysis

(Paina 3 kuda Introduction lo ne include avvali)

2. Literature Review

1. Existing systems
2. Analysis of existing systems
3. Drawbacks of existing systems

3. Dataset

1. HAM10000
2. Classification (7 types)
3. Data Preprocessing
4. Data Augmentation
5. Data Splitting
 - HAM10000 Dataset Overview
 - Description
 - Data Sources
 - Data Preprocessing
 - Data Augmentation
 - Random Rotations
 - Horizontal and Vertical Flips

- Zoom-in and Zoom-out Transformations
 - Brightness and Contrast Adjustments
- **Dataset Splitting**
 - Training and Validation Split

(ee bullet points vachela chudu)

4. Model Architecture

1. **MobileNet Introduction**
2. **Features**
3. **Advantages**
4. **Model Parameters**
5. **Layers (Each and every layer + layer specific details)**
6. **Plot and Architecture diagram**

5. Methodology

1. **Requirements**
 1. **Hardware**
 2. **Software (Libraries, Frameworks)**
2. **Transfer Learning**
3. **Training Process (Hyperparameter tuning, Batch size, Learning rate, Epochs)**
4. **Evaluation metrics**
 1. **Accuracy**
 2. **Precision**
 3. **Recall**
 4. **F1 Score**
 5. **Confusion matrix**

(ivii only theoretical ga with formulas, mana outputs include cheyodhu)

6. Implementation

1. **Data Loading**
2. **Model Building**
 1. **Loading pre-trained model**
 2. **Initializing the metrics**
 3. **Compiling the model**
3. **Model Training**
 1. **Setting up Training parameters**
 2. **Training process**

3. Training plots (accuracy, loss curves)
4. Deployment
 1. Environment
 2. Setting up model
 3. Output formatting

(Some pictures)

7. Testing

1. Model Evaluation (on trained dataset)
2. Cross Validation (evaluation on new data)
3. Hyperparameter Tuning
4. Testing images

8. Results

- Training Results
- Validation and Testing Results
- Performance Metrics
- Confusion Matrix
- ~~ROC Curves~~

10. Conclusion

- Summary of Findings
- Implications for Dermatological Diagnosis
- Future Work

11. References

Chuddham mellaga