

GRAIN PALETTE - A DEEP LEARNING ODYSSEY IN RICE TYPE CLASSIFICATION THROUGH TRANSFER LEARNING

PRESENTED BY

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RICE TYPE CLASSIFICATION – A CHALLENGE

- RICE IS A STAPLE FOOD FOR MILLIONS .
- ACCURATE RICE CLASSIFICATION IS CRUCIAL FOR QUALITY CONTROL , PRICING AND TRADE .
- TRADITIONAL METHODS ARE TIME CONSUMING , LABOUR INTENSIVE AND PRONE TO ERRORS .

TRANSFER LEARNING – THE KEY TO EFFICIENT LEARNING

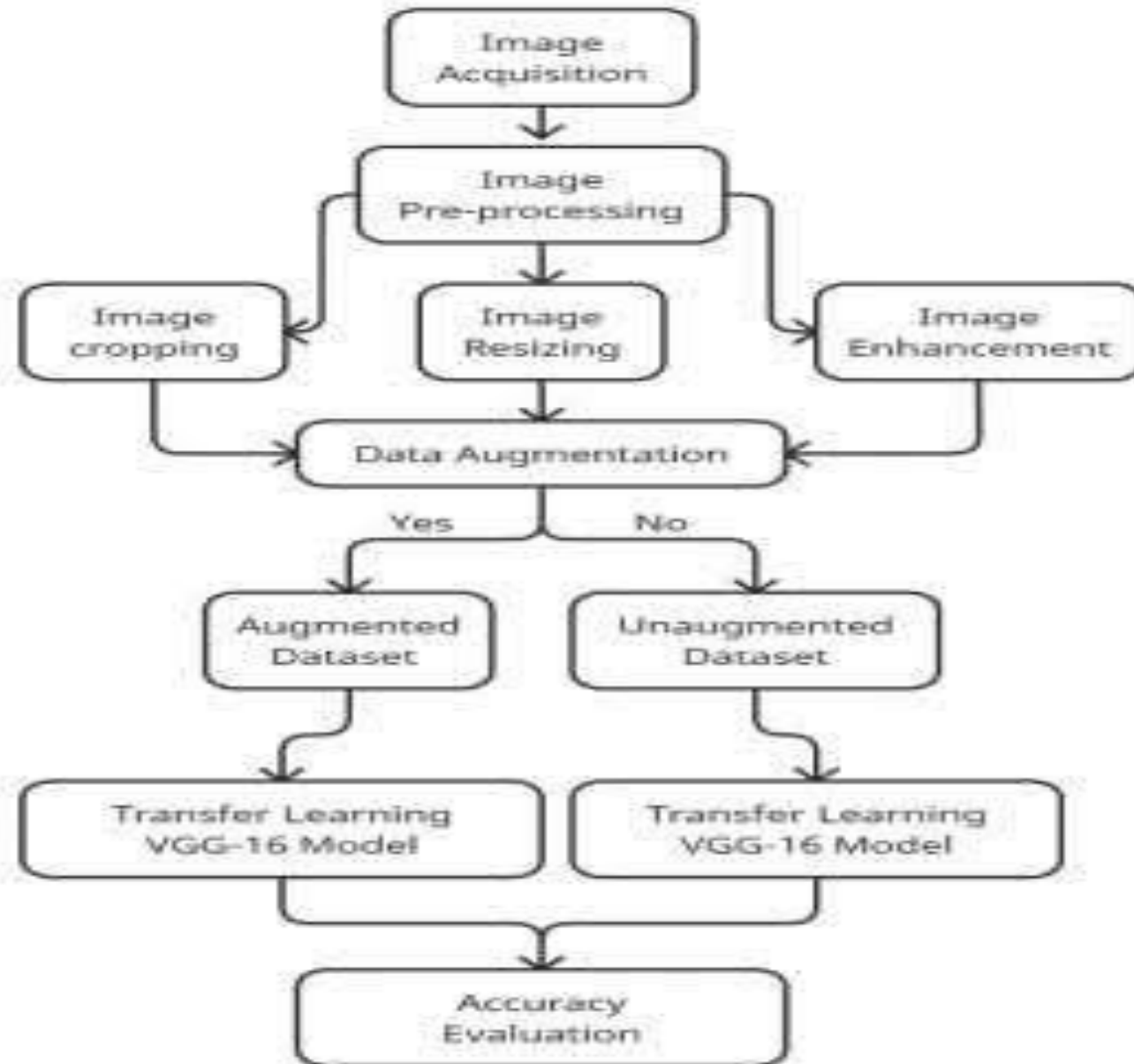
TRANSFER LEARNING ENABLES THE REUSE OF PRETRAINED MODELS FOR NEW TASKS ,
REDUCING TRAINING TIME AND IMPROVING ACCURACY .

- PRETRAINED MODELS ARE FINETUNED FOR RICE TYPE CLASSIFICATION
- FEATURES LEARNED FROM LARGE DATASETS ARE ADAPTED FOR GRAIN PALETTE .
- TRANSFER LEARNING ENABLES EFFICIENT LEARNING WITH LIMITED DATA .
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GRAIN PALETTE METHODOLOGY

- DATA COLLECTION : RICE GRAIN IMAGES FROM VARIOUS RESOURCES . .
- DATA PREPROCESSING : IMAGE RESIZING, NORMALIZATION AND DATA AUGMENTATION.
- MODEL TRAINING : FINE-TUNING PRE-TRAINED CNNs FOR RICE TYPE CLASSIFICATIONS.
- MODEL EVALUATION : ACCURACY, PRECISION, RECALL AND F1-SCORE METRICS.

FLOWCHART



RESULTS

GRAIN PALETTE RESULTS :

HIGH ACCURACY IN DISTINGUISHING BETWEEN DIFFERENT RICE TYPES.
EFFICIENT LEARNING WITH LIMITED DATA.
ROBUST PERFORMANCE ACROSS VARIOUS RICE GRAIN IMAGES.



CONCLUSION

Grain palette demonstrates the potential of deep learning and transfer learning for rice type classifications.

Efficient and robust classification.

Robust performances across various rice grain images.

Opportunities for further improvement and extension to other grain types.

Thank you