REAL TIME VIOLENCE ALERT SYSTEM

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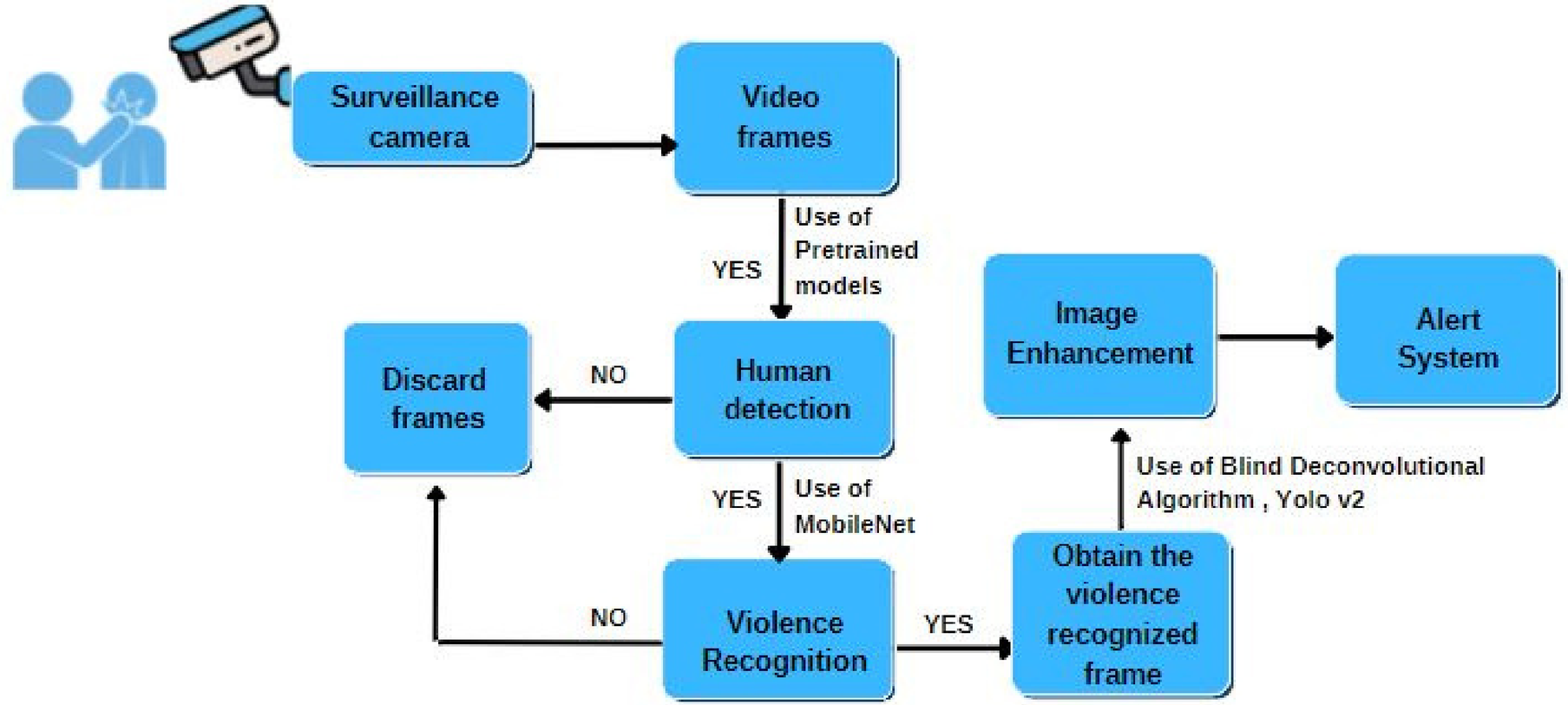
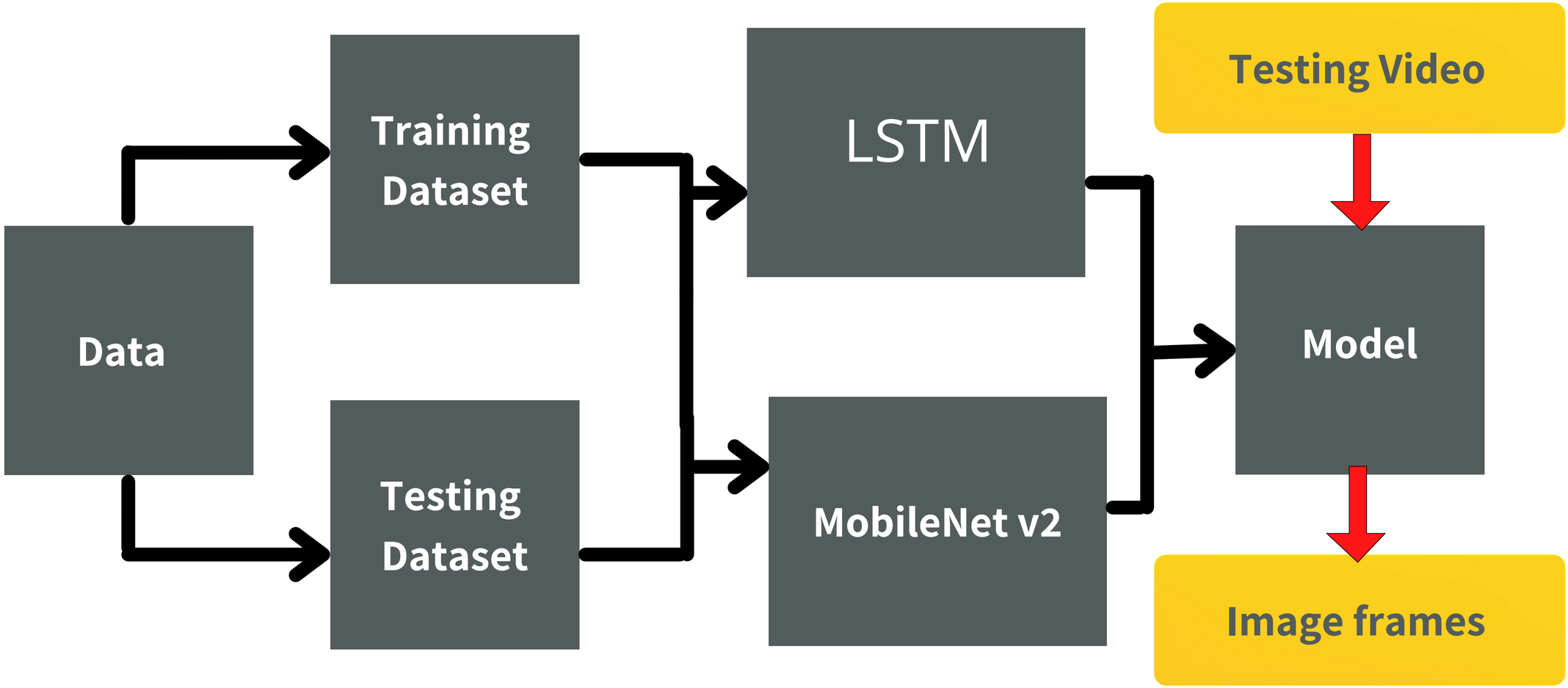
PROBLEM STATEMENT

- CCTV Surveillance is used to a greater extent but still it lacks the feature of automatic violence detection.
- Manual monitoring is not a feasible task and the time taken to respond to the situation is also crucial.
- A Real-time violence alert system is proposed.

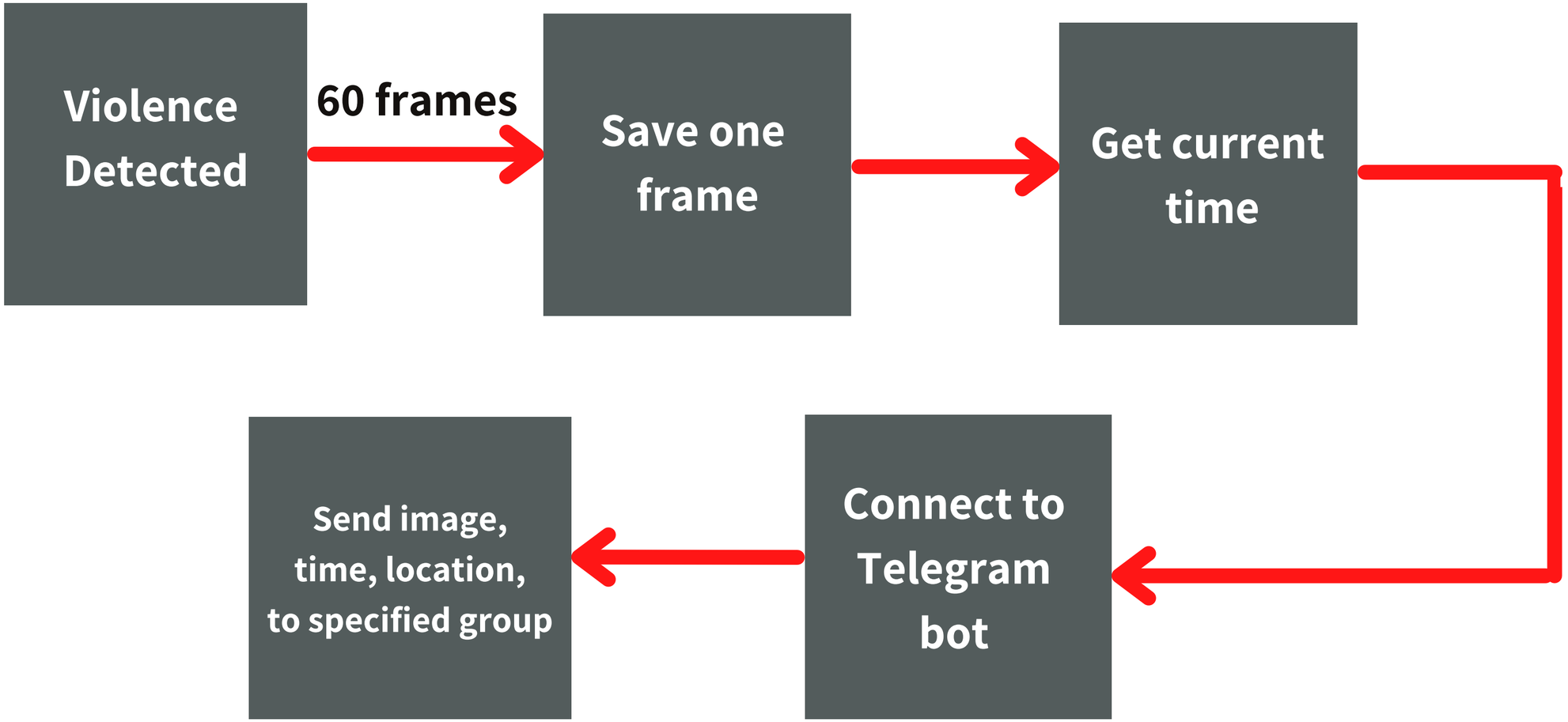
ARCHITECTURE DIAGRAM



METHODOLOGY



ALERT MODULE



METHODOLOGY

- A dataset having 1000 videos each of violence category and non-violence category was chosen
- A model was trained using MobileNetV2 and LSTM using the dataset
- Real-time video footage is given as input
- Output is obtained as image frames

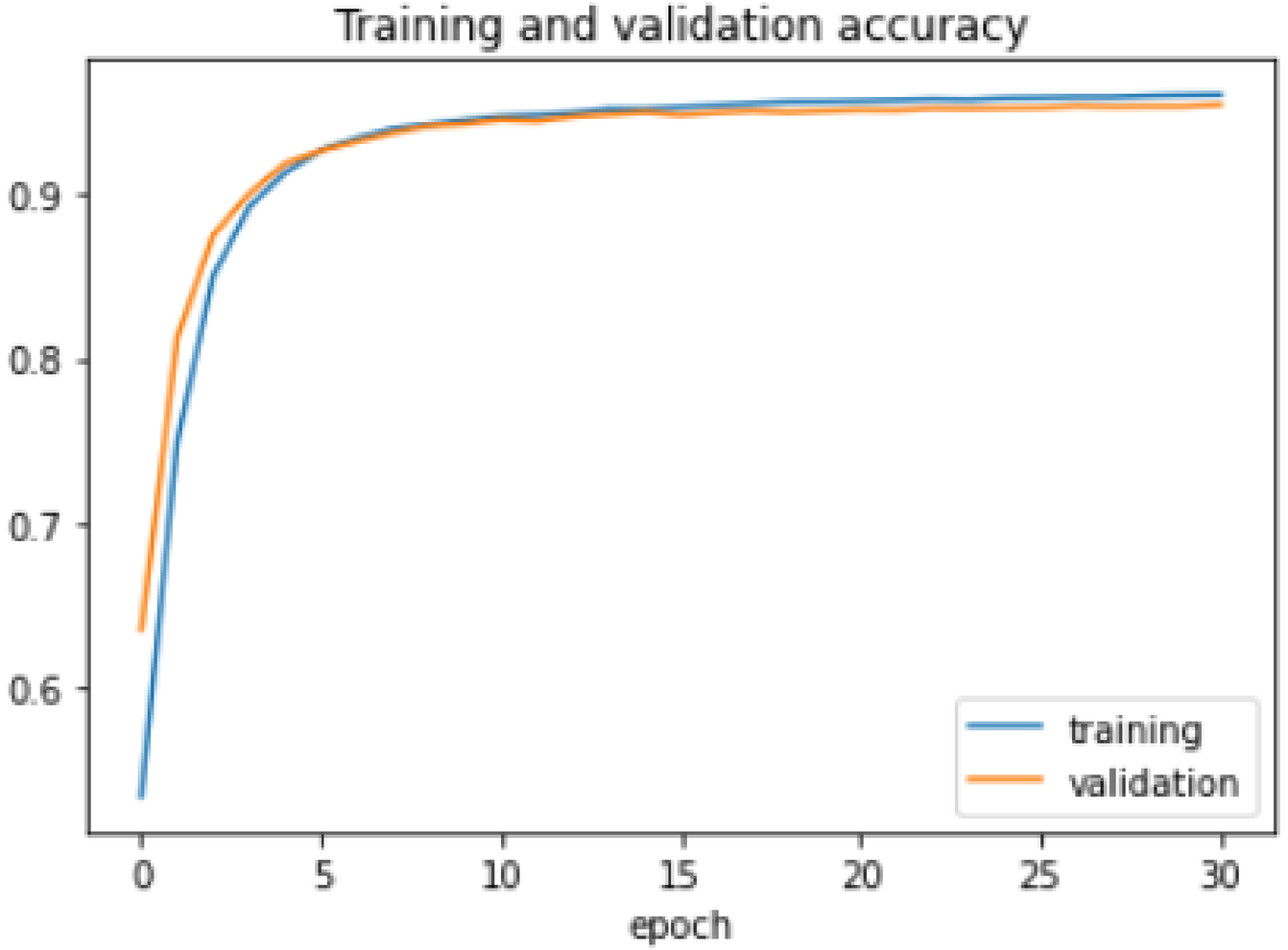
MOBILENET V2

- Convolutional neural network that is 53 layers deep
- Provides real-time classification capabilities under computing constraints in devices like smartphones.
- Utilizes an inverted residual structure where the input and output of the residual blocks are thin bottleneck layers.
- Uses lightweight convolutions to filter features in the expansion layer.

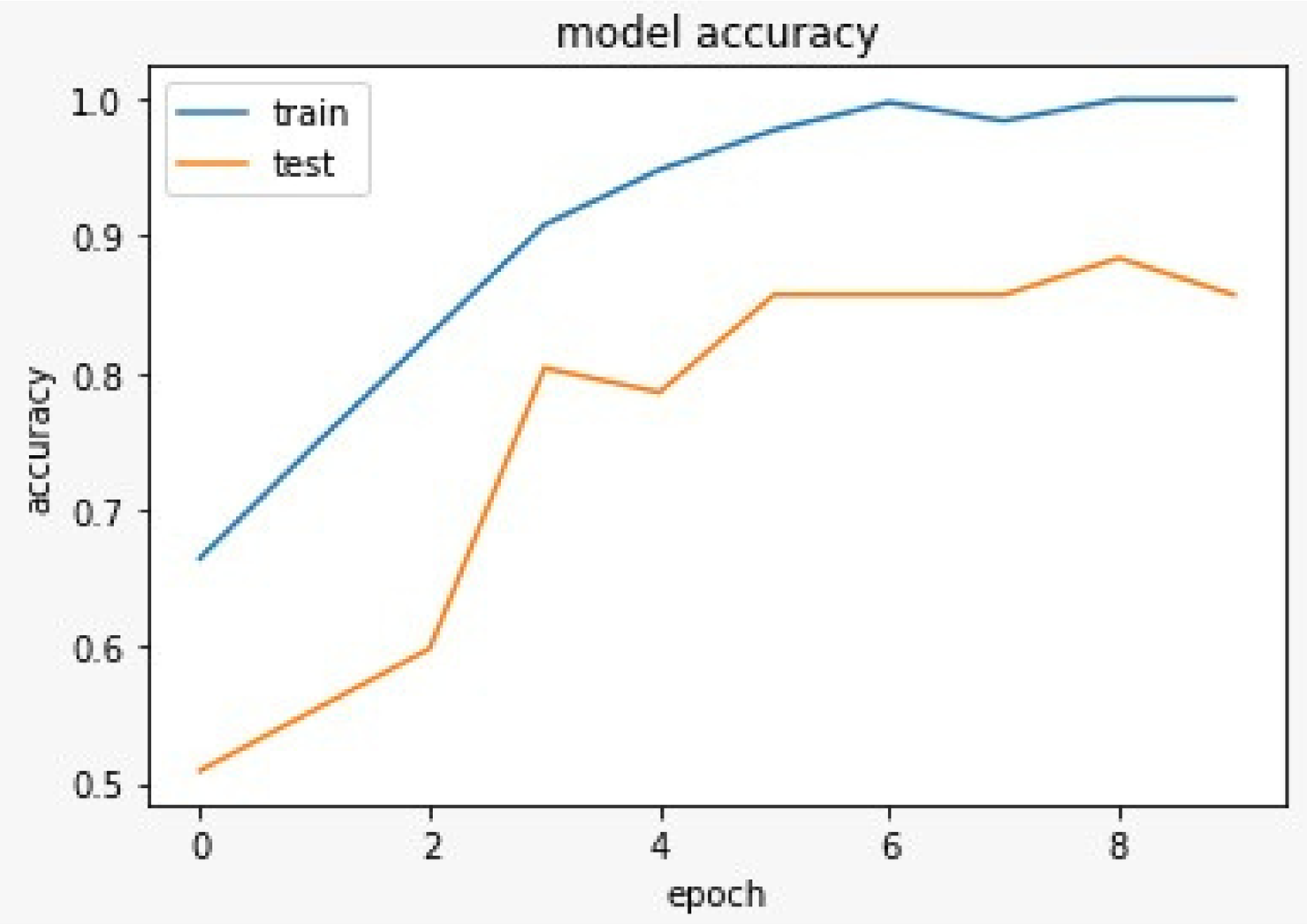
CNN LONG SHORT-TERM MEMORY(LSTM)

- Involves CNN layers for feature extraction and LSTM layers for sequence prediction.
- Generally used for activity recognition, image labeling, and video labeling.
- LSTM network can remember and connect previous information to data obtained in the present.
- LSTM network is a class of recurrent neural network (RNN) that uses memory blocks that assist to run successfully and learn faster than traditional RNN

RESULTS - MOBILENET V2



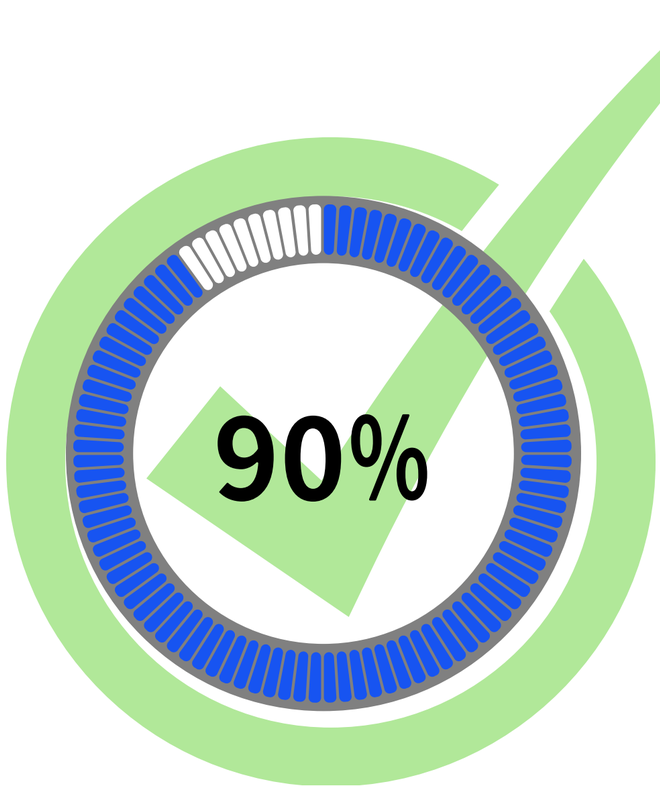
RESULTS- CNN LSTM



RESULTS- COMPARISON

Method	MobileNet v2	CNN LSTM
Accuracy	0.96	0.89
Precision	0.96	0.85
Recall	0.95	0.82
F1-score	0.95	0.87

WORK PLAN



Nov

AREA AND TOPIC RESEARCH

Status : Completed

Dec

LITERATURE REVIEW AND DATASET COLLECTION

Status : Completed

----------Implementation phase starts----------

Jan-Mar

DESIGN & IMPLEMENTATION

Status : Completed

Apr

NOVELTY IMPLEMENTATION

status : In Progress

May

FINAL TESTING, PAPER PUBLICATION

Status : To be completed

REFERENCES

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THANK YOU