REAL TIME VIOLENCE ALERT SYSTEM

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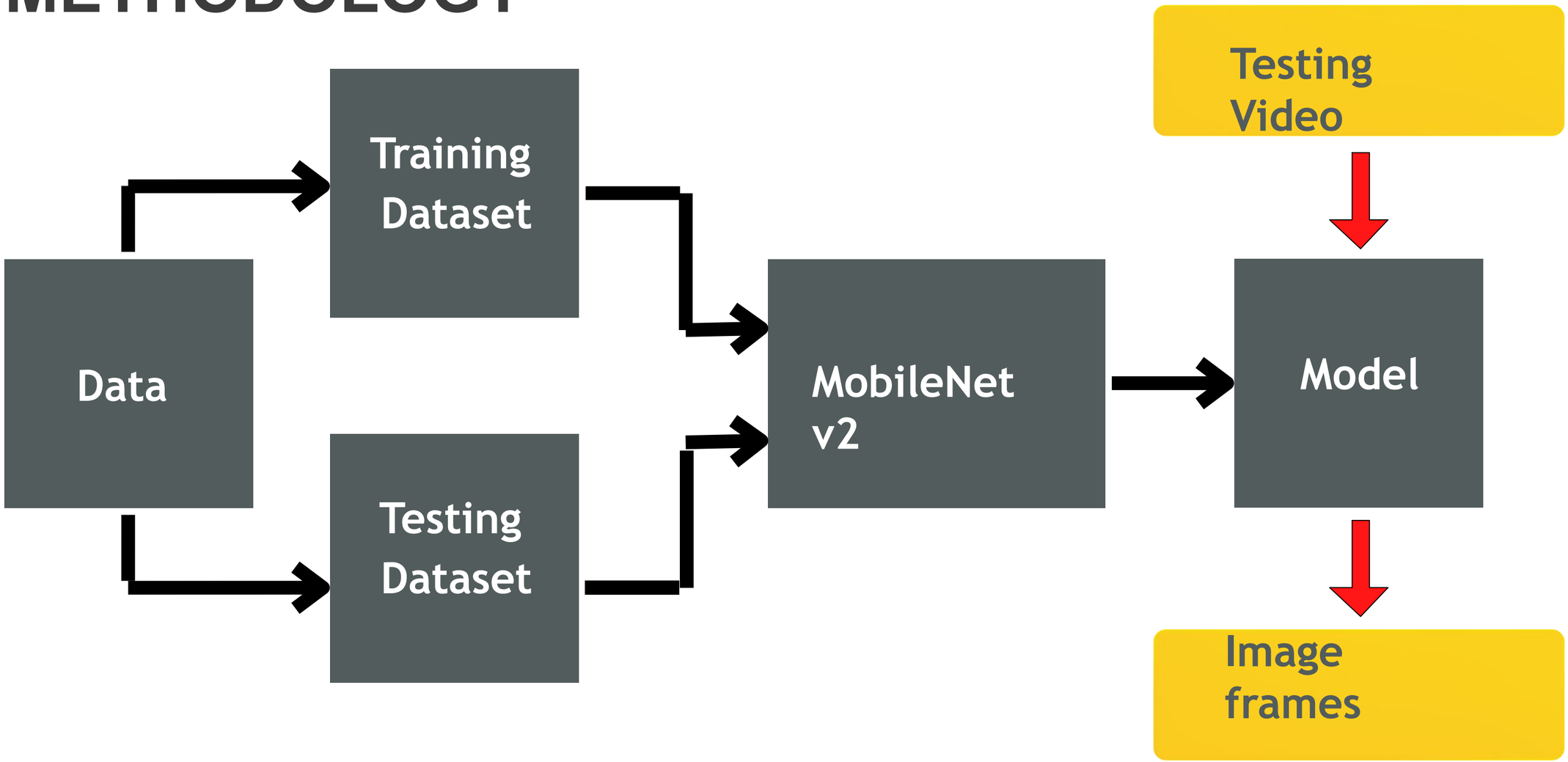
PROBLEM STATEMENT

- 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.

METHODOLOGY



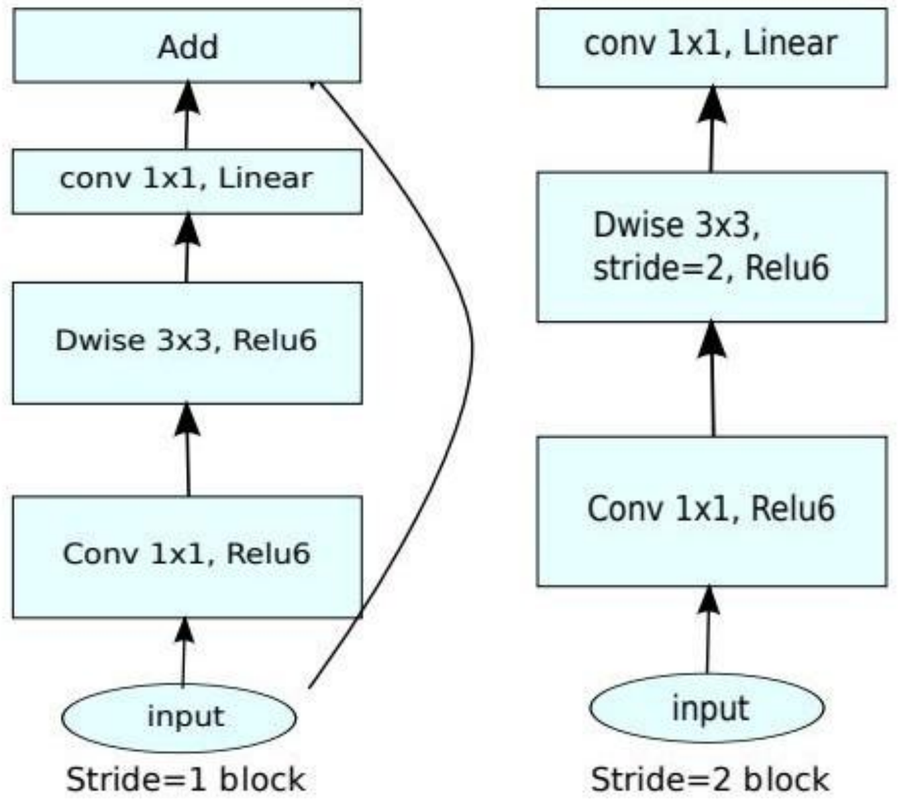
METHODOLOGY

- A dataset having 1000 videos each of violence category and non-violence category was chosen
- A model was trained using MobileNetV2 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.

MOBILENET V2 ARCHITECTURE



OPERATING ENVIRONMENT

PYTHON

- The language used.

GOOGLE COLABORATORY

- Environment for running python and similiar Machine Learning and Deep Learning projects
- Able to use Google's GPU and TPU

RESULTS

```
Best Epochs:  31
Accuracy on train: 0.9616789817810059   Loss on train: 0.11210563778877258
Accuracy on test: 0.9577874541282654    Loss on test: 0.116333968937397
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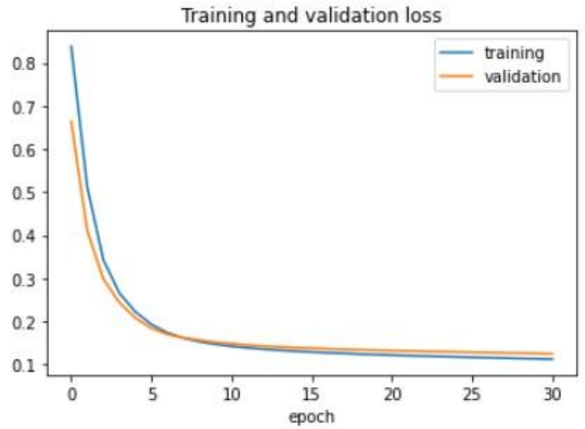


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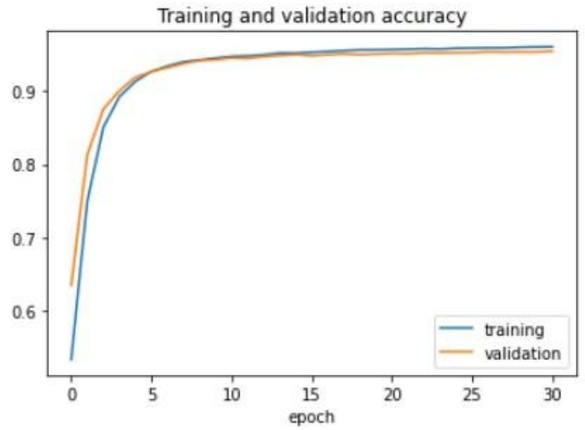
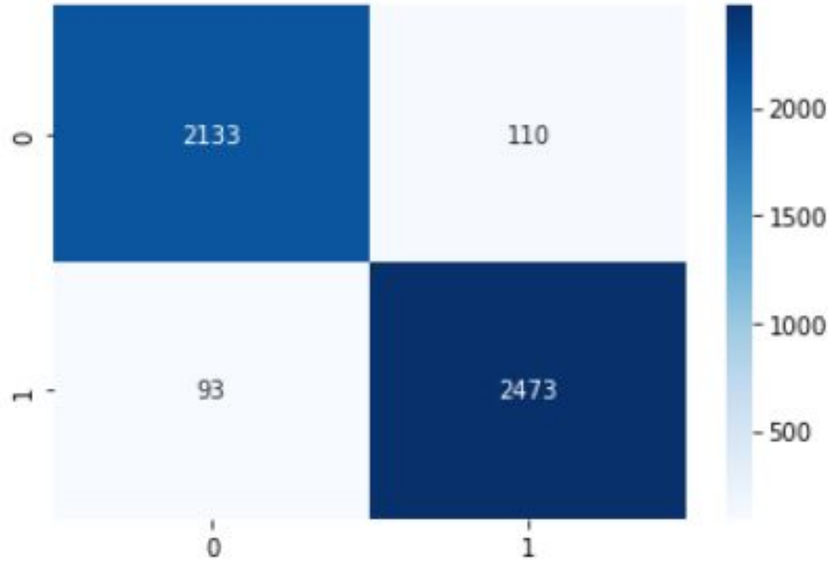


> Correct Predictions: 4606
> Wrong Predictions: 203



	precision	recall	f1-score
NonViolence	0.96	0.95	0.95
Violence	0.96	0.96	0.96
accuracy			0.96
macro avg	0.96	0.96	0.96
weighted avg	0.96	0.96	0.96

ACTION PLAN

Jan

AREA AND TOPIC RESEARCH

Status : Completed

Jan

LITERATURE REVIEW AND DATASET COLLECTION

Status : Completed

Implementation phase starts

Feb

DESIGN & IMPLEMENTATION

Status : Completed

Feb

NOVELTY IMPLEMENTATION

status : Completed

March

FINAL TESTING, and Model output

Status : Completed

REFERENCES

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THANK YOU