

REAL TIME VIOLENCE ALERT SYSTEM

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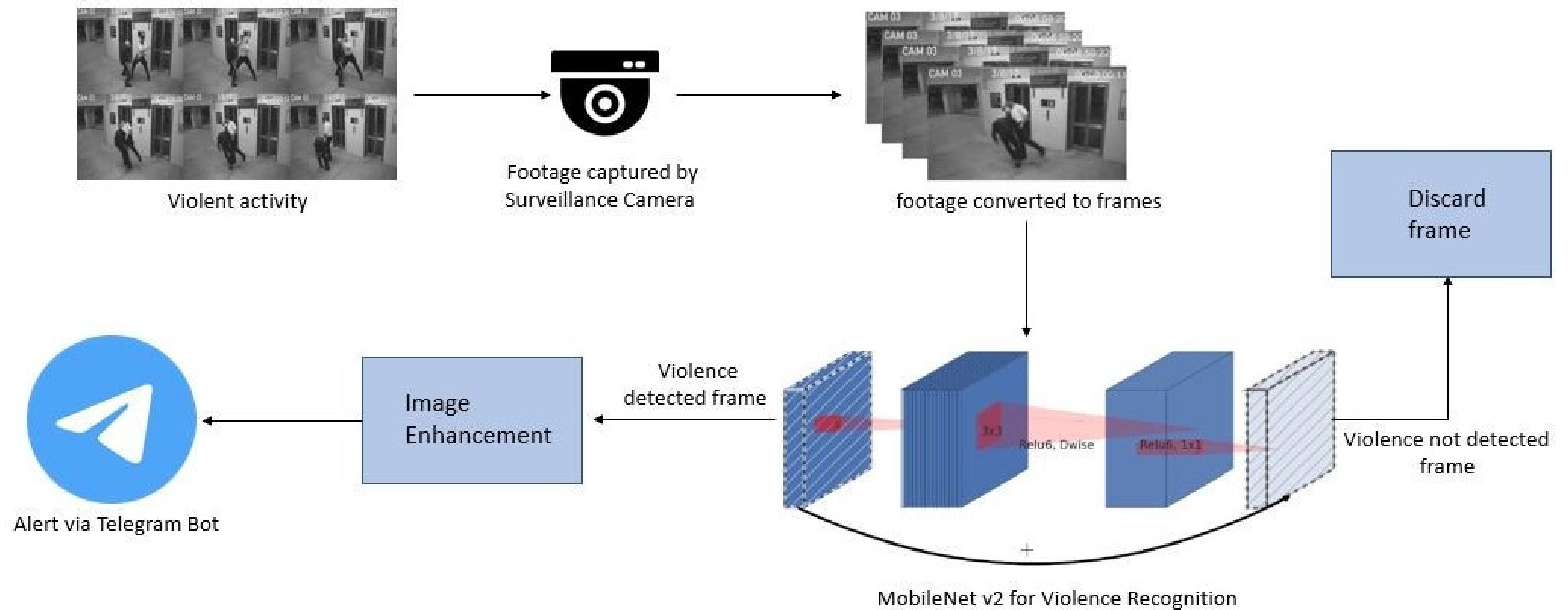
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PROBLEM STATEMENT

- 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



ALERT MODULE

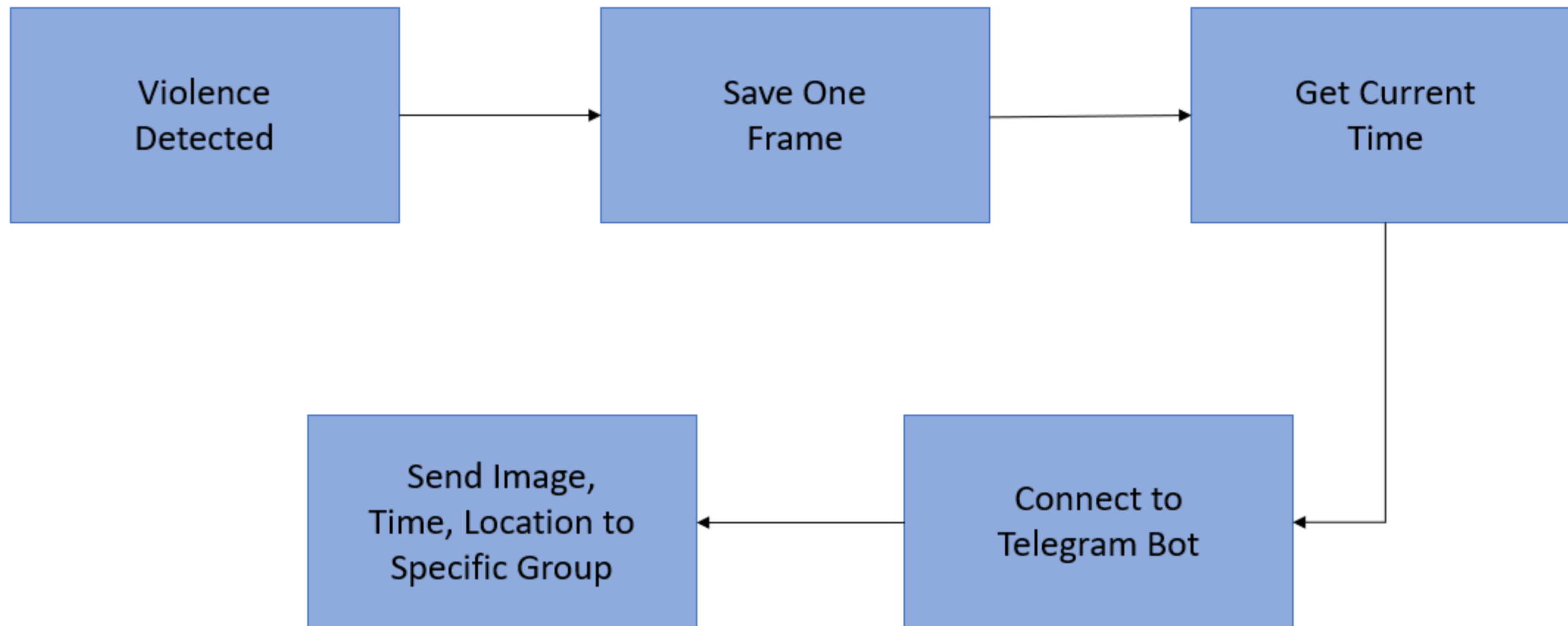


IMAGE ENHANCEMENT

- Sharpness and color of obtained output frames is slightly improved
- Uses inbuilt functions-Python PIL Library
- Helps authorities in face detection & cross-checking

METHODOLOGY

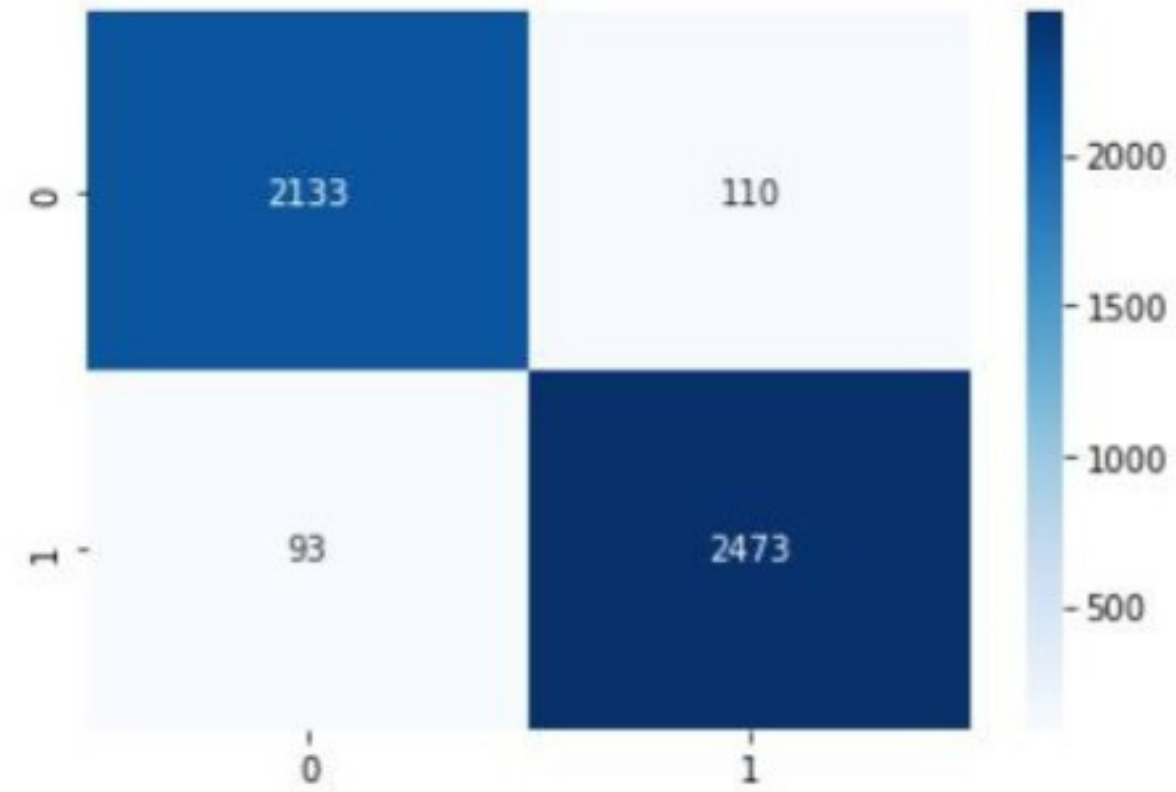
- A dataset having 1000 videos each of violence category and non-violence category was chosen
- A model was trained using MobileNetV2 using the dataset
- Real-time video footage is given as input
- Output is obtained as image frames

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.

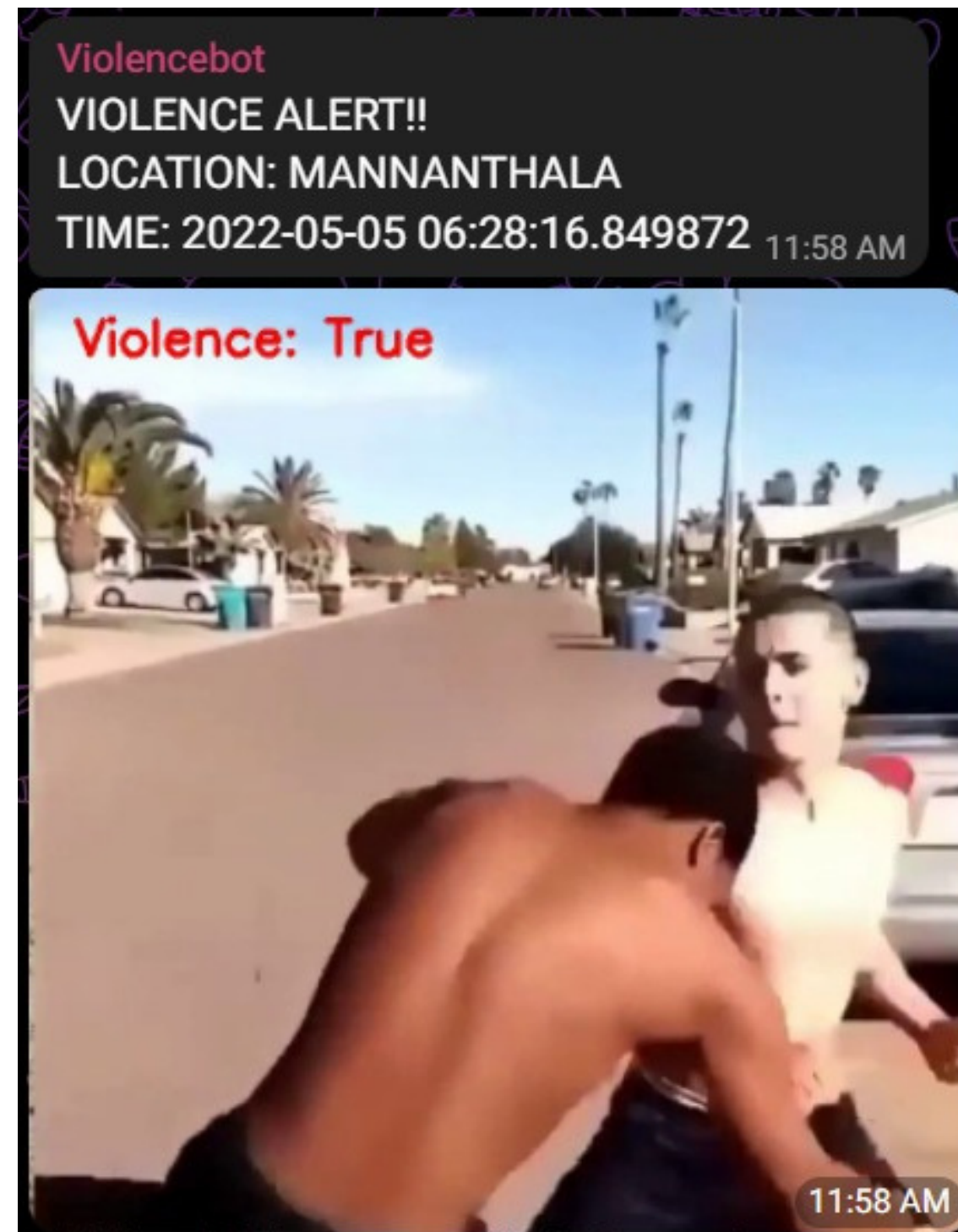
RESULTS

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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

RESULTS



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 : Completed

May



**FINAL TESTING PAPER
PUBLICATION**

Status : Completed

REFERENCES

- [1] Mi Young Lee, Ijaz Ul Haq, Seungmin Rho, Sung Wook Baik, and Samee Ullah Khan Cover the Violence: A Novel Deep-Learning-Based Approach Towards Violence-Detection in Movies, MDPI Article Received: 3 October 2019; Accepted: 7 November 2019; Published: 18 November 2019
- [2] M. -S. Kang, R. -H. Park and H. -M. Park, "Efficient Spatio-Temporal Modeling Methods for Real-Time Violence Recognition," in IEEE Access, vol. 9, pp. 76270-76285, 2021, doi: 10.1109/ACCESS.2021.3083273, Date of Publication: 25 May 2021.
- [3] Zhou P, Ding Q, Luo H, Hou X (2018) Violence detection in surveillance video using lowlevel features. PLoS ONE 13(10): e0203668. <https://doi.org/10.1371/journal.pone.0203668>, Published: October 3, 2018
- [4]<https://towardsdatascience.com/review-mobilenetv2-light-weight-model-image-classification-8febb490e61c>

The background features a complex, glowing blue molecular structure on the left side, composed of interconnected hexagons and pentagons with bright blue nodes at the vertices. This structure fades into a dark blue background on the right. The text "THANK YOU" is centered in a bold, white, sans-serif font.

THANK YOU