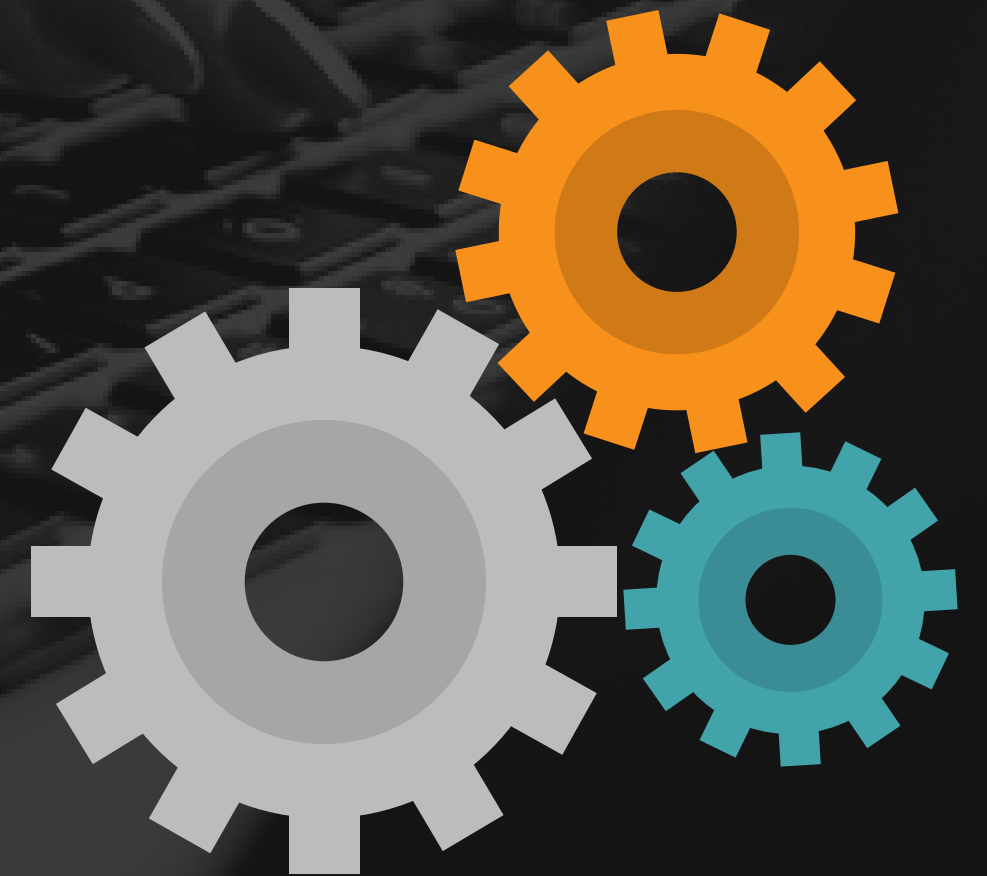
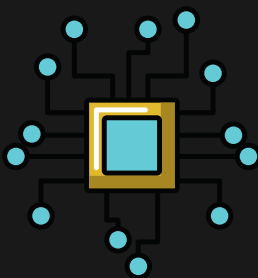


MLL PROJECT

FILTER IMPLEMENTATION USING OPENCV





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1

INTRODUCTION



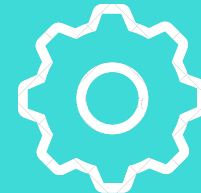
2

CODEBLOCK



3

ALGORITHM



4

APPLICATION

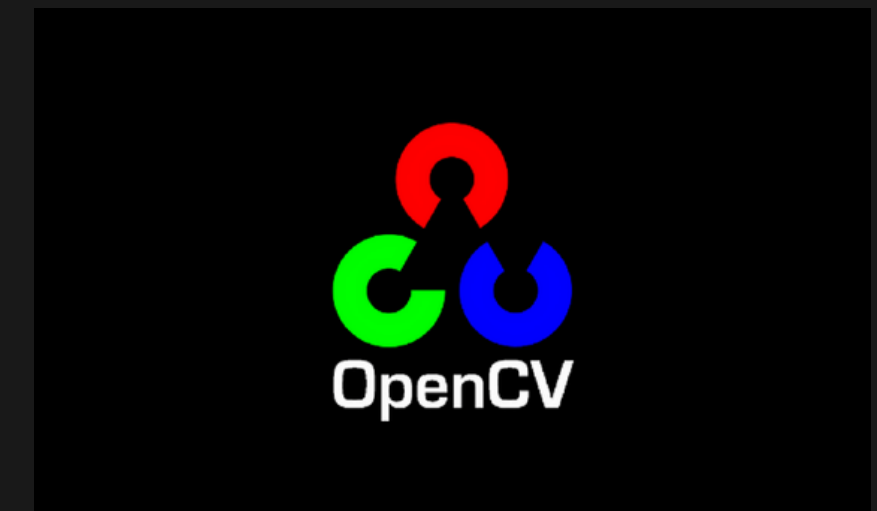
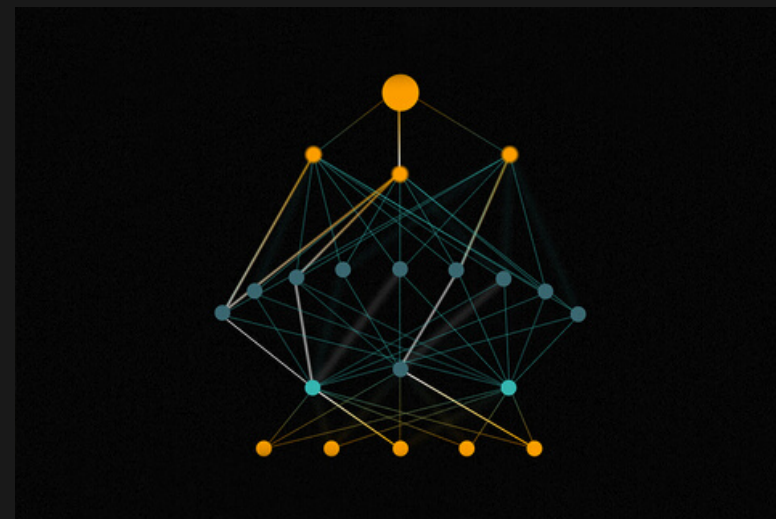


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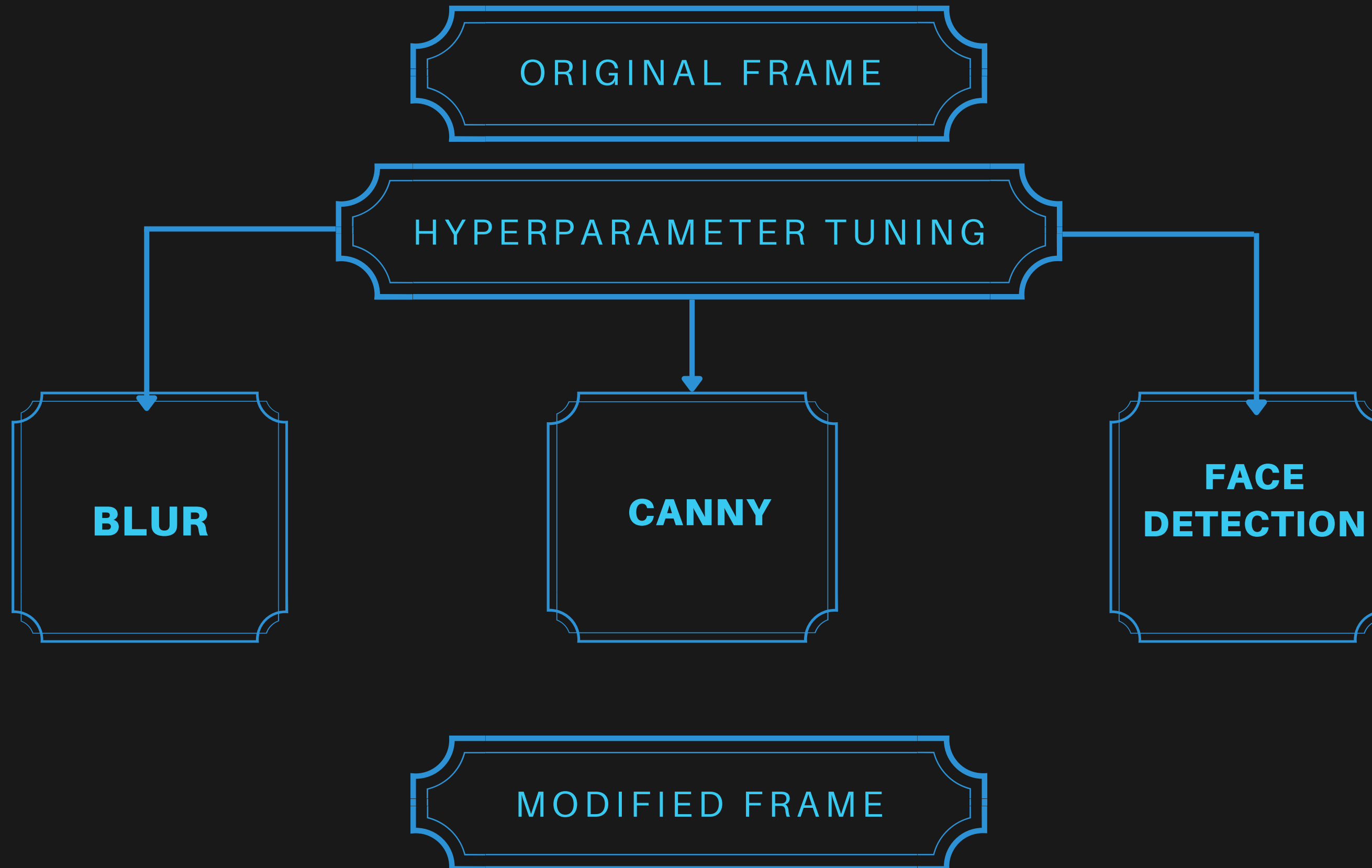
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INTRODUCTION

- IMAGE PROCESSING IS THE PROCESS OF TRANSFORMING AN IMAGE INTO A DIGITAL FORM AND PERFORMING CERTAIN OPERATIONS TO GET SOME USEFUL INFORMATION FROM IT.
- WE USE EXTENSIVE PYTHON LIBRARY OPENCV FOR IMPLEMENTING FILTERS IN OUR PROJECT.
- WE BUILD REALTIME CAPTURE WINDOW WHICH PROVIDE GLIMPSE OF FILTER LIKE BLUR & CANNY AS PER OUR INPUTS.
- WE DESIGN FACE DETECTION MODEL USING DEEP LEARNING CNN ALGORITHMS WHICH CAPABLE TO LOCATE FACE AT HIGHER INFERENCE RATE.



CODEBLOCK



ALGORITHM

1. IMPORT CV2 AND NUMPY

2. INITIALIZE VARIABLES

PREVIEW = 0

BLUR = 1

FACE_DETECT = 2

CANNY = 3

IMAGE_FILTER = PREVIEW

RESULT = NONE

ALIVE = TRUE

KEY = CV2.WAITKEY(1)

3. CREATE A PREVIEW WINDOW USING CV2 LIBRARY.

4. CREATE FUNCTION FOR FACE DETECTION.

5. CREATE FUNCTION FOR BLUR.

6. CREATE FUNCTION FOR CANNY.

7. WHILE ALIVE IS TRUE, READ THE INPUT FROM CAMERA AND CHECK

IF IMAGE_FILTER == PREVIEW, THEN RESULT= FRAME,

ELSE IF IMAGE_FILTER == CANNY, GO TO CANNY FUNCTION,

ELSE IF IMAGE_FILTER == BLUR, GO TO BLUR FUNCTION

ELSE IF IMAGE_FILTER == FACE_DETECT, GO TO FACE DETECTION FUNCTION.

8. SHOW THE RESULT AS PER THE VARIABLE RESULT.

9. IF KEY=='Q', THEN ALIVE = FALSE AND GO TO STEP 7.

10. ELSE IF KEY == 'C' THEN IMAGE_FILTER = CANNY AND GO TO STEP 7.

11. ELSE IF KEY=='B' THEN IMAGE_FILTER = BLUR AND GO TO STEP 7.

12. ELSE IF KEY== 'P' THEN IMAGE_FILTER = PREVIEW AND GO TO STEP 7.

13. END.

APPLICATION

BLUR FILTER :

- IT HELPS IN SMOOTHING THE IMAGE.
- LOW-INTENSITY EDGES ARE REMOVED.
- IT HELPS IN HIDING THE DETAILS WHEN NECESSARY.

CANNY FILTER :

- CANNY EDGE DETECTION IS USED FOR IMAGE SEGMENTATION AND DATA EXTRACTION.
- IT HAS BEEN WIDELY APPLIED IN VARIOUS COMPUTER VISION SYSTEMS.

FACE DETECTION :

- UNLOCK SMARTPHONES
- AID FORENSIC INVESTIGATIONS
- SMARTER ADVERTISING
- FIND MISSING PERSONS

