Computer vision youtube course
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Task: Interactive Image Processing with Mouse Events and Time Display

Goal: Write a program that allows the user to interactively perform various image processing operations on an image using mouse events and keyboard shortcuts. The program should also display the current time on the frame. The program should perform the following tasks:

1. Load an image from disk using the cv2.imread() function.

2. Define a mouse callback function that responds to mouse events. The function should perform the following tasks based on the type of mouse event:

   a. If the left mouse button is pressed and dragged, draw a rectangle on the image using the cv2.rectangle() function.

   b. If the right mouse button is pressed and dragged, draw a circle on the image using the cv2.circle() function.

   c. If the middle mouse button is pressed and dragged, perform image translation on the image using the cv2.warpAffine() function.

3. Display the image with the mouse callback function using the cv2.imshow() function.

4. Define a function to display the current time on the frame. You can use Python's built-in datetime module to get the current time:
5. Add the current time to the frame using the cv2.putText() function.

6. Wait for a key event using the cv2.waitKey() function.

7. If the 'g' key is pressed, convert the image to grayscale using the cv2.cvtColor() function.

8. If the 'r' key is pressed, reset the image to its original state.

9. If the 's' key is pressed, save the image to disk using the cv2.imwrite() function.

10. If the 'c' key is pressed, crop the region of interest defined by the rectangle using array slicing.

11. If the 'z' key is pressed, undo the previous operation.

12. If the 'q' key is pressed, exit the program.

13. If the 'h' key is pressed, display a help message.

14. Implement a history of image modifications so that the user can undo previous operations.

15. Implement a GUI with sliders and buttons for adjusting image parameters, such as brightness, contrast, and saturation.