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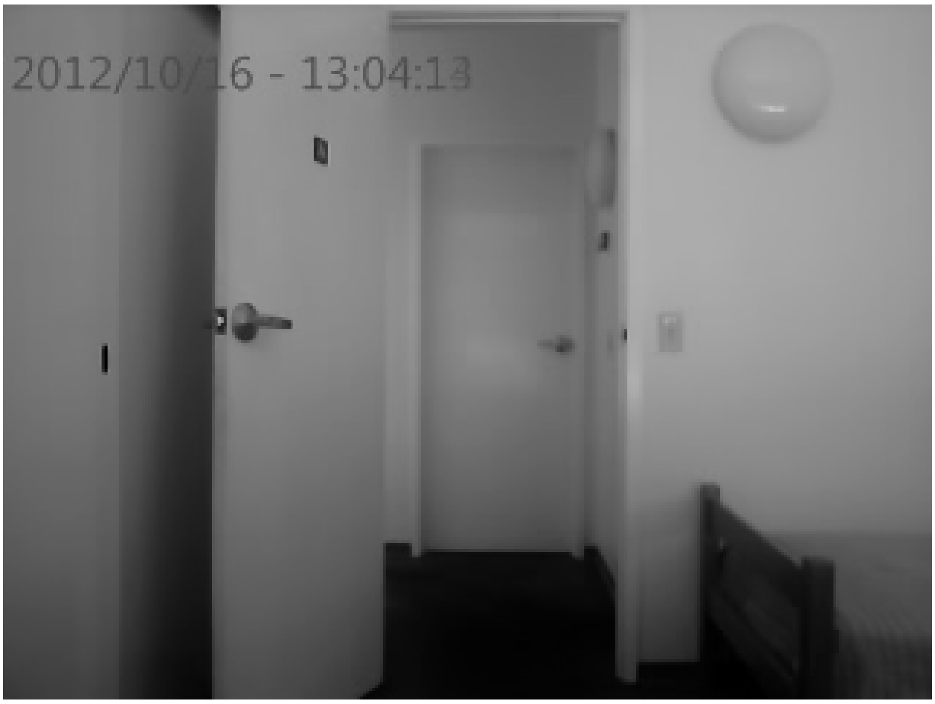
Processamento Digital de Imagens(PDI)

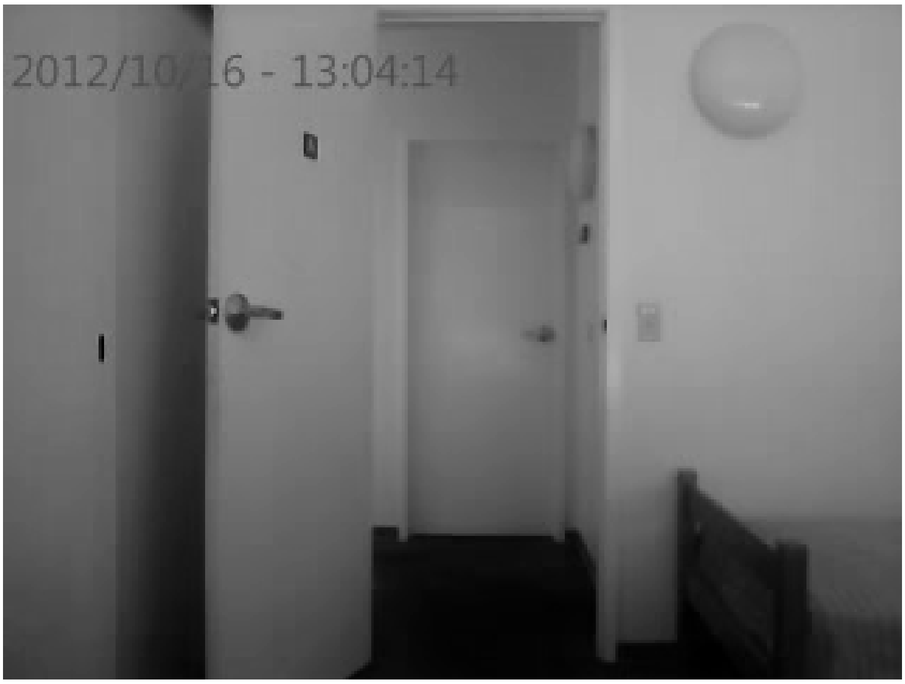
Relatório VideoMaker

```
import cv2
import numpy as np

# Open the video file for reading
video_capture = cv2.VideoCapture('surveillance.mpg')

# Create a VideoWriter object for saving the output video
fourcc = cv2.VideoWriter_fourcc(*'MJPG')
out = cv2.VideoWriter('Background_Subtraction.avi', fourcc, 30.0,
(int(video_capture.get(3)), int(video_capture.get(4))))

# Initialize parameters
alpha = 0.95
theta = 0.1
background = None

while True:
    ret, frame = video_capture.read()

    if not ret:
        break

    currImg = cv2.cvtColor(frame,
cv2.COLOR_BGR2GRAY).astype(np.float32) / 255.0

    if background is None:
        background = currImg
    else:
        background = alpha * background + (1 - alpha) * currImg

    diffImg = np.abs(currImg - background)
    threshImg = (diffImg > theta).astype(np.uint8) * 255

    # Display frames
    cv2.imshow('New frame', currImg)
    cv2.imshow('Background frame', background)
    cv2.imshow('Difference image', diffImg)
    cv2.imshow('Thresholded difference image', threshImg)

    # Write frame to output video
    out.write(cv2.cvtColor(frame, cv2.COLOR_BGR2RGB, -1))

    if cv2.waitKey(1) & 0xFF == ord('q'):
        break

# Release video objects
video_capture.release()
out.release()
cv2.destroyAllWindows()

# Save images
cv2.imwrite('Background_Subtraction_curr.png', (currImg *
255).astype(np.uint8))
cv2.imwrite('Background_Subtraction_background.png', (background *
255).astype(np.uint8))
cv2.imwrite('Background_Subtraction_thresh.png', threshImg)
cv2.imwrite('Background_Subtraction_diff.mp4', (diffImg *
255).astype(np.uint8))
```

Resultados:



Background_Substraction_Background



Background_Substraction_Curr

Background_Substraction_Tresh