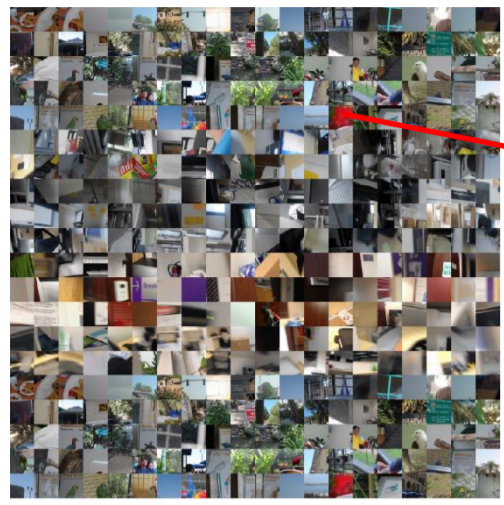


MOTIVATION AND OBJECTIVE

- Increase in the video sharing websites has also increased the number of questionable anonymous videos on the Web. Our objective is to find the source camera of an anonymous video.



Social Media



Anonymous Video

Motivation



(i) This Camera Took?



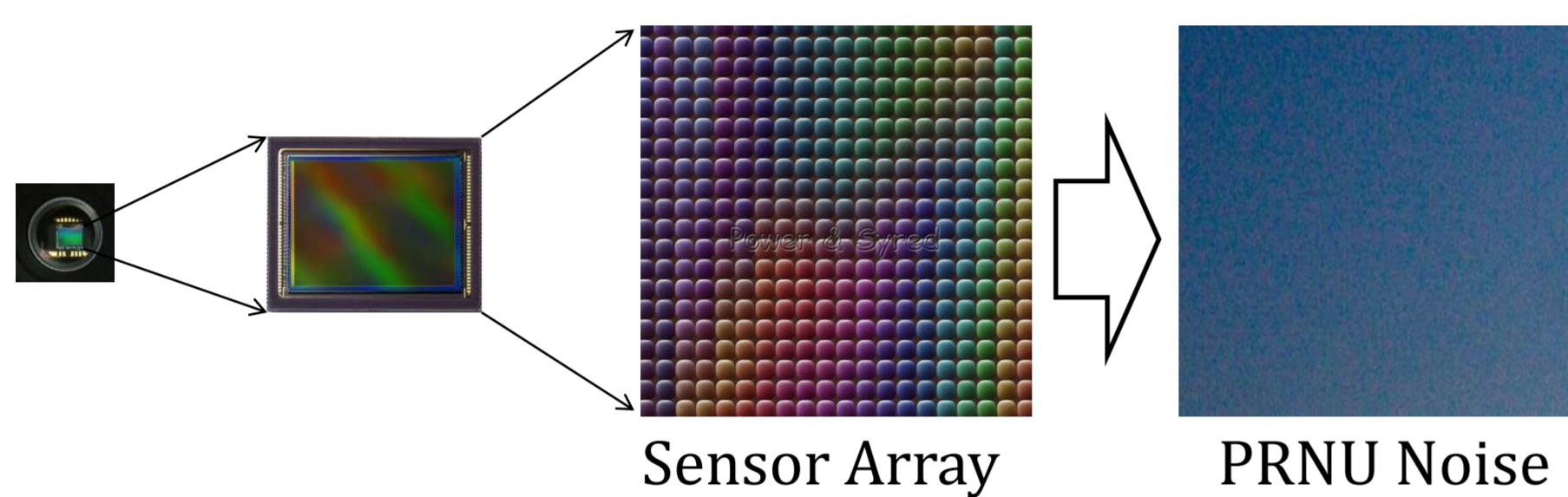
(ii) Which Camera Took?



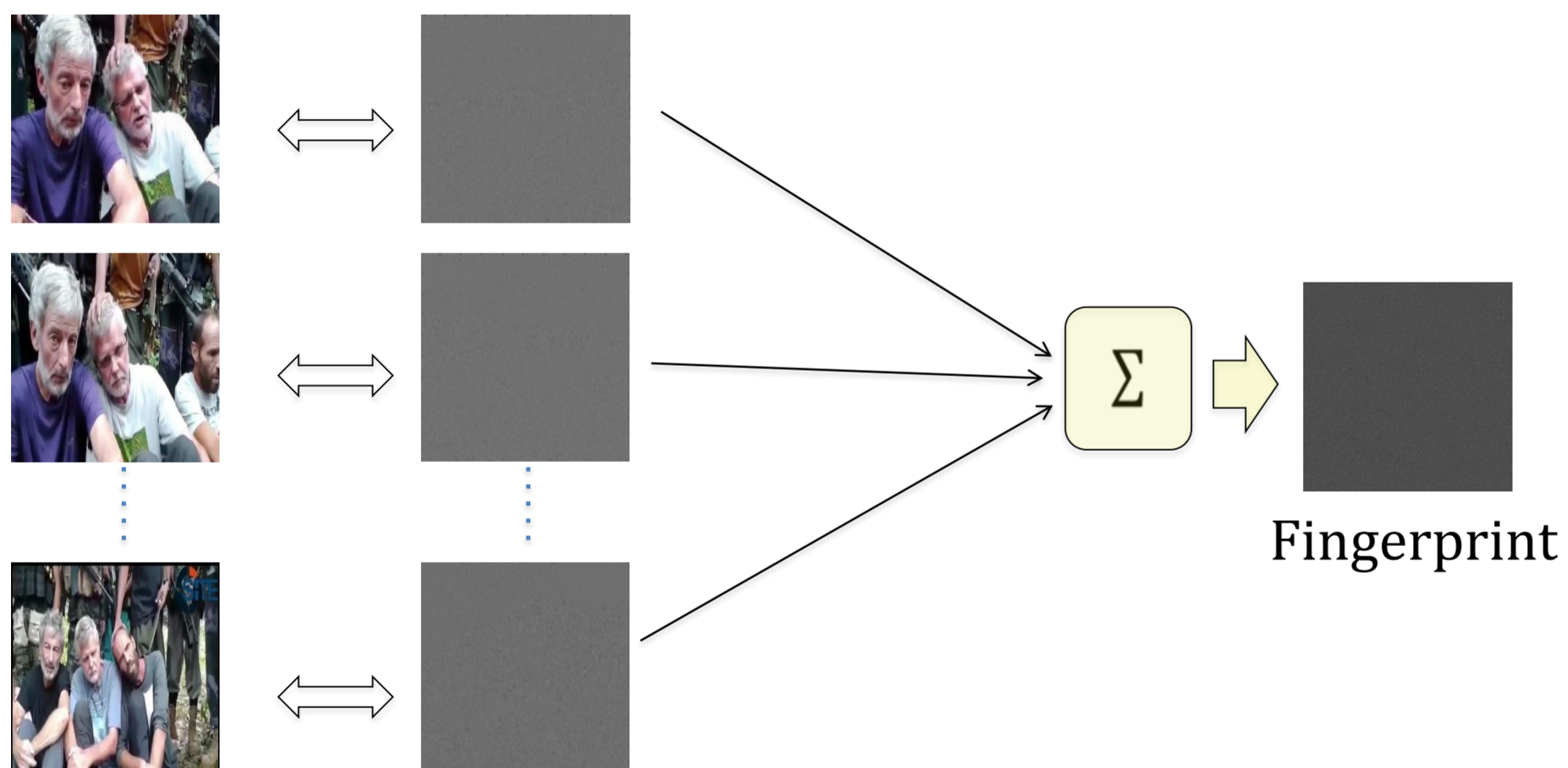
Objective

APPROACH: PRNU BASED METHOD

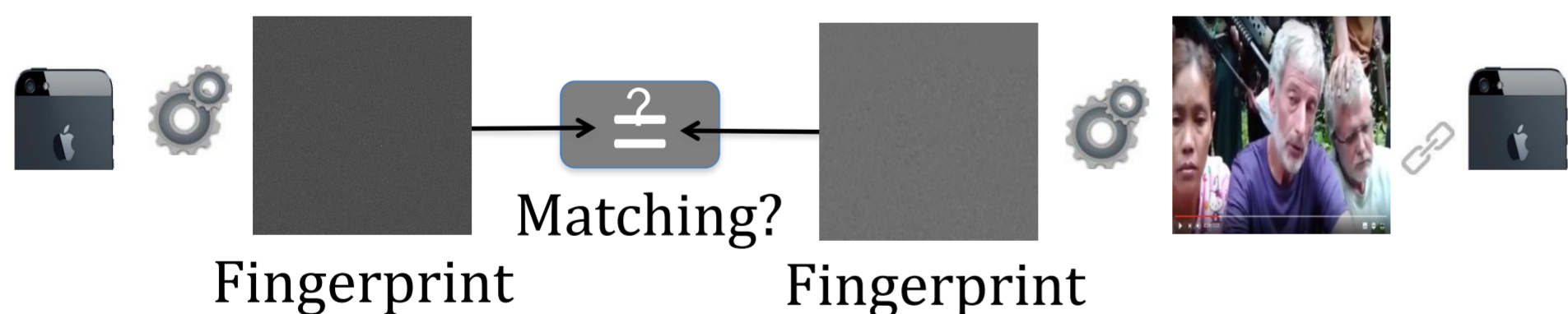
- Every camera has a unique PRNU (Photo Response Non Uniformity) noise that can act as fingerprint.



- Finding exact PRNU difficult. Fingerprint can be found from a set from estimated PRNU of a set of video frames.



- Source camera of the video found by matching camera fingerprint with fingerprint extracted from the video.



TECHNICAL CHALLENGE

- Since frames in a stabilized video are not aligned, finding fingerprint from a stabilized video is challenging.



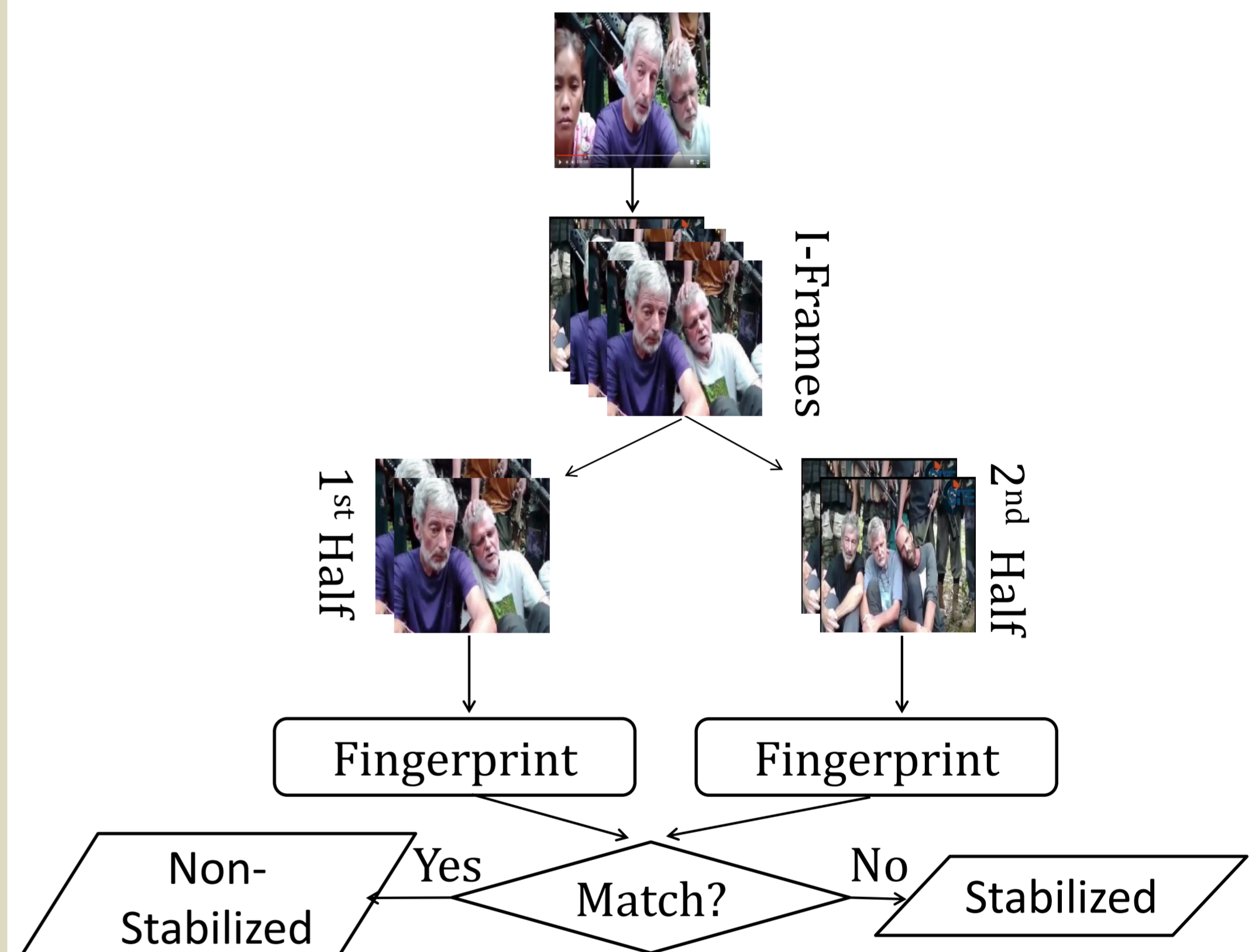
Non Stabilized

Stabilized

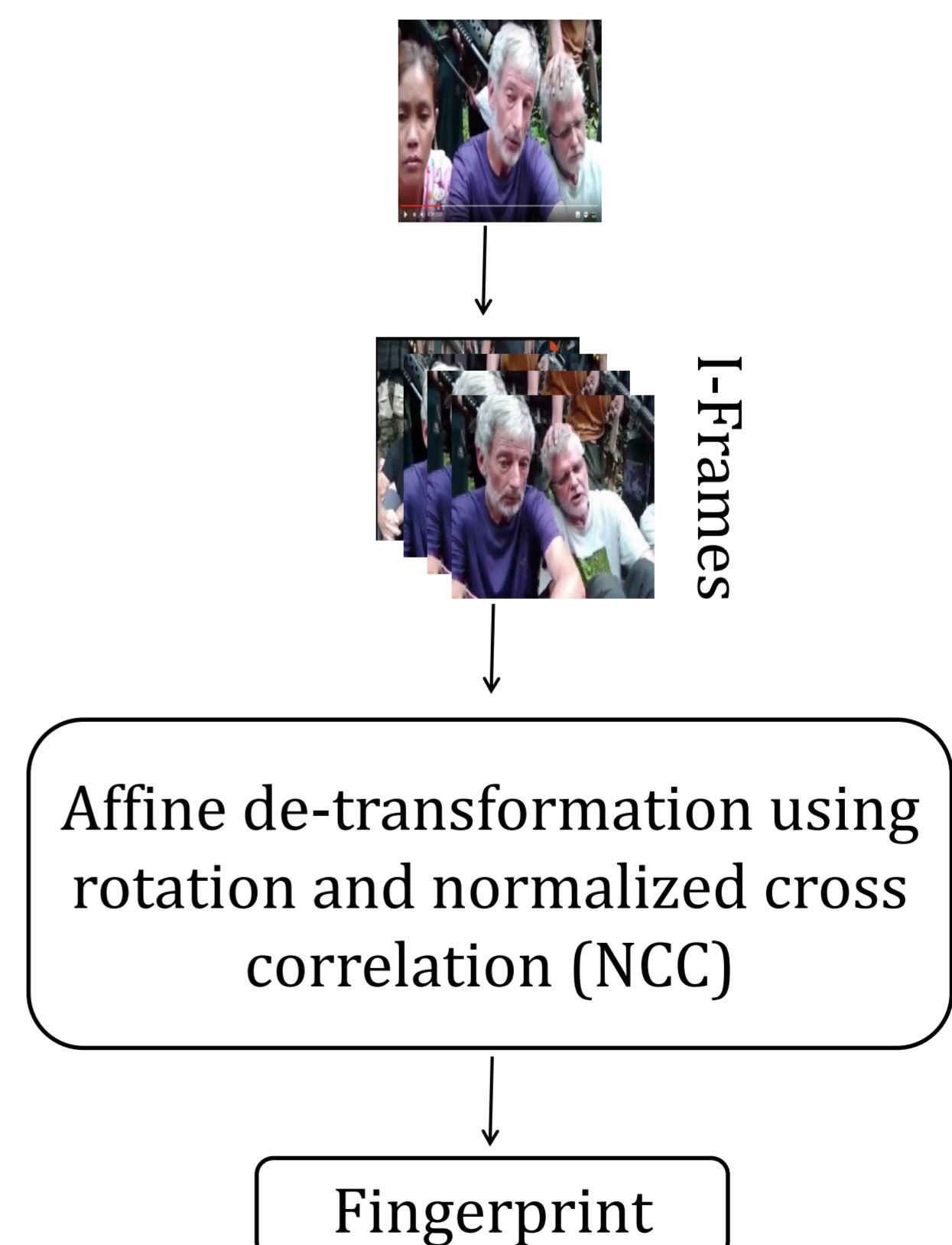
Stabilization Misaligns Frames

OUR SOLUTION

- Find out if a video is digitally stabilized.



- Fingerprint of a stabilized video calculated using affine de-transformation.



- When video fingerprint is matched with fingerprint extracted from an image, the extracted image fingerprint is scaled and/or cropped.