

Team members: Chowduri Suhrit, Utkarsh Pratap Singh Jadon

Project Title (1 sentence):

Infant Face Detection and Censor Using NCC and Covariance Tracking

Provide a short description of the project (short paragraph):

Due to privacy reasons, infant's faces are blurred out in images posted on social media by people and celebrities. We aim to automate this task using two computer vision algorithms: NCC and Covariance Tracking. After implementing these two algorithms on a given dataset, we'll compare their performances and provide comparison results. We will explore the possibility of downsampling the template image to yield better results.

Where you will get the data (1-2 sentences)?

Adobe Stock, Shutter Stock, Pinterest, and other royalty free image sources.

What will each team member code/develop (short paragraph, in detail, per person: what vision algorithms will you use/develop, how will apply them, what parts of the algorithms will be changed/explored, what will you test, etc.)?

Suhrit – Will work on Normalized Cross Correlation. Using one template containing generic image of an infant, will perform NCC on given dataset, perform gaussian blurring in the region around best match in each image, and generate output image.

Utkarsh – Will work on Covariance Tracking. Using covariance matrix of one template containing generic image of an infant, will perform Covariance Tracking on given dataset, perform gaussian blurring in the segmented section in each image, and generate output image.

Both members will explore the impact of implementing same algorithms after down-sampling of template image.

How will each team member evaluate the work/results (short paragraph?)

We will create the test dataset by drawing bounding boxes on our test images around infant's face. Then each member will implement their algorithm on the test images and generate output images. Each output image will be considered as correctly detected and censored, if the percentage of overlap between blurred section of output image and bounding box is greater than 75%. Results will be provided in terms of Detection Accuracy (%) and Censor Accuracy (%)