Algo 1 (detectStripes.cpp)
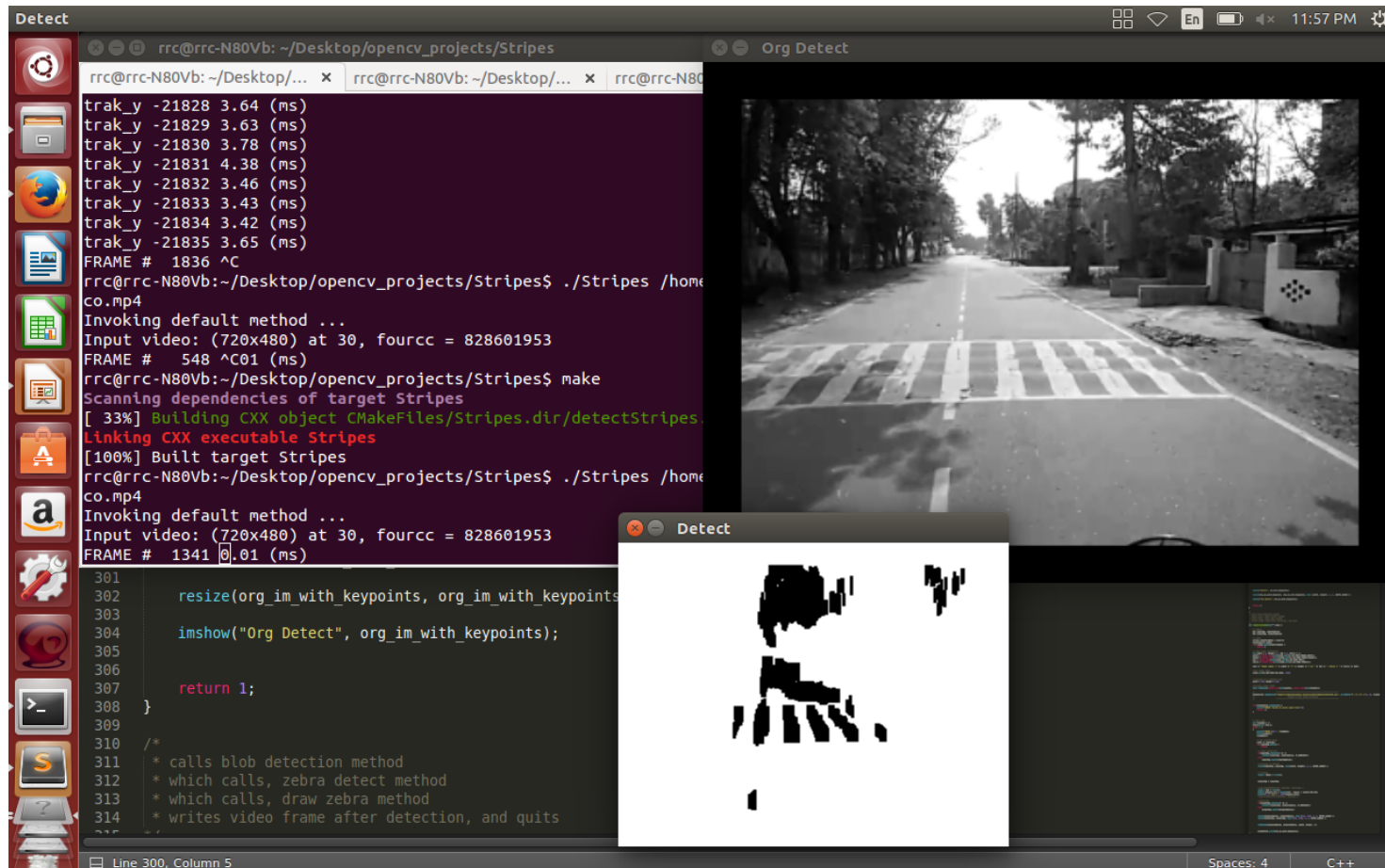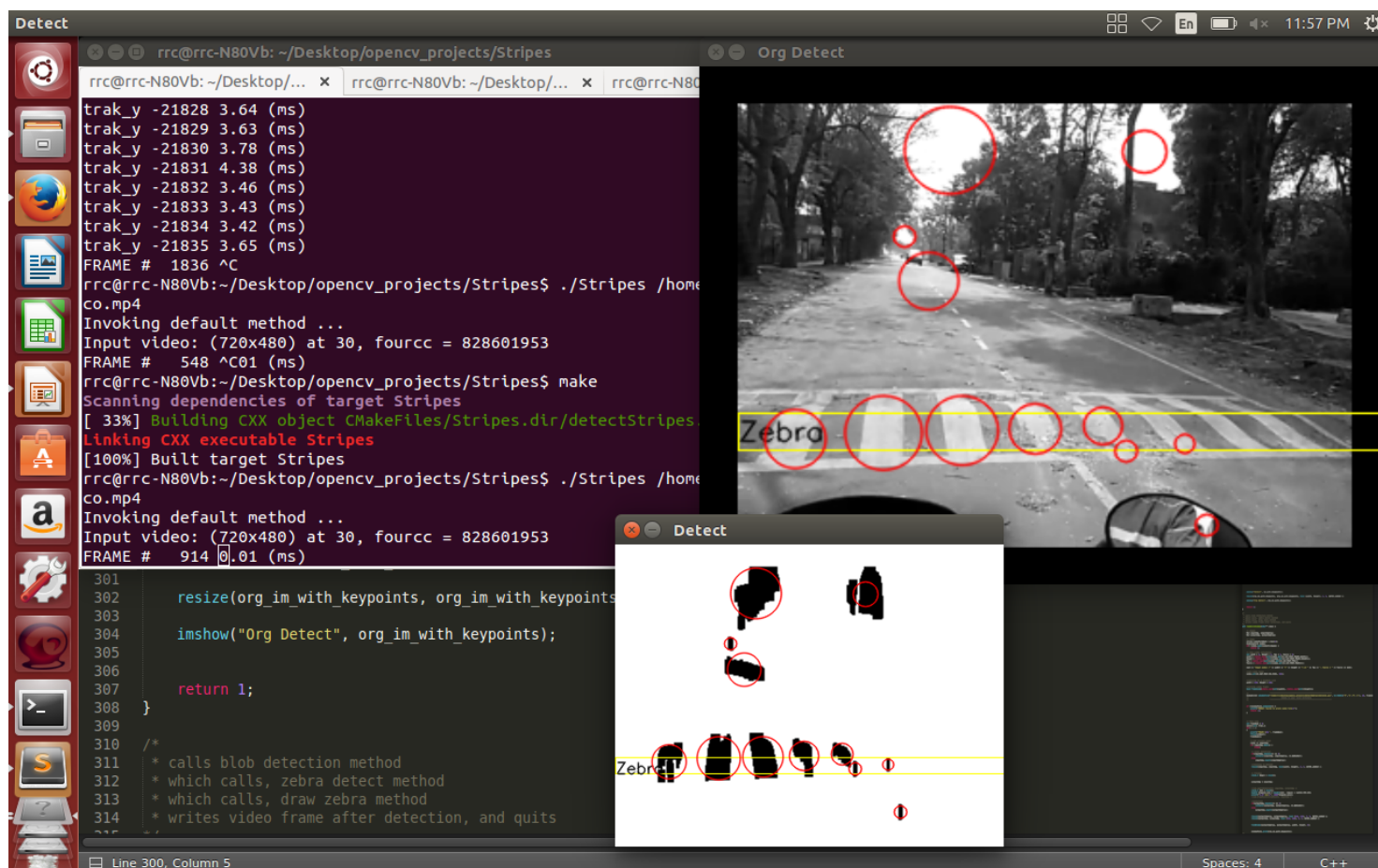
> read a video frame

- > resize frame to 320x240

- > get homography matrix using 4 fixed points, set heuristically

- > histogram equalization

- > binary global thresholding

- > erode and dilate with vertical structuring element

- > blob detection

- > applying stripe detection using y-location, blob diameter, inter-blob distance in x and y, inter-blob diameter

- > reverse y-location using inverse homography matrix

- > draw yellow rectangle, write black "Zebra", and draw red circles around blobs at y-location with +-10 precision

Algo 1

*NALCO dataset showing white stripes with bars*

Algo 1

NALCO dataset showing TRUE detection of white stripes with bars

Algo 2 (detectStripeBars.cpp)

> read a video frame

- > resize frame to 320x240

- > get homography matrix using 4 fixed points, set heuristically

- > warp perspective to get IPM

- > histogram equalization

- > binary global thresholding

- > erode and dilate with vertical structuring element

- > blob detection

- > applying stripe detection using y-location, blob diameter, inter-blob distance in x and y, inter-blob diameter

- > reverse y-location using inverse homography matrix

- > draw yellow rectangle, write black "Zebra", and draw red circles around blobs at y-location with +-10 precision

- > track a true detection up to 3 previous frames before marking it, as true

Algo 2
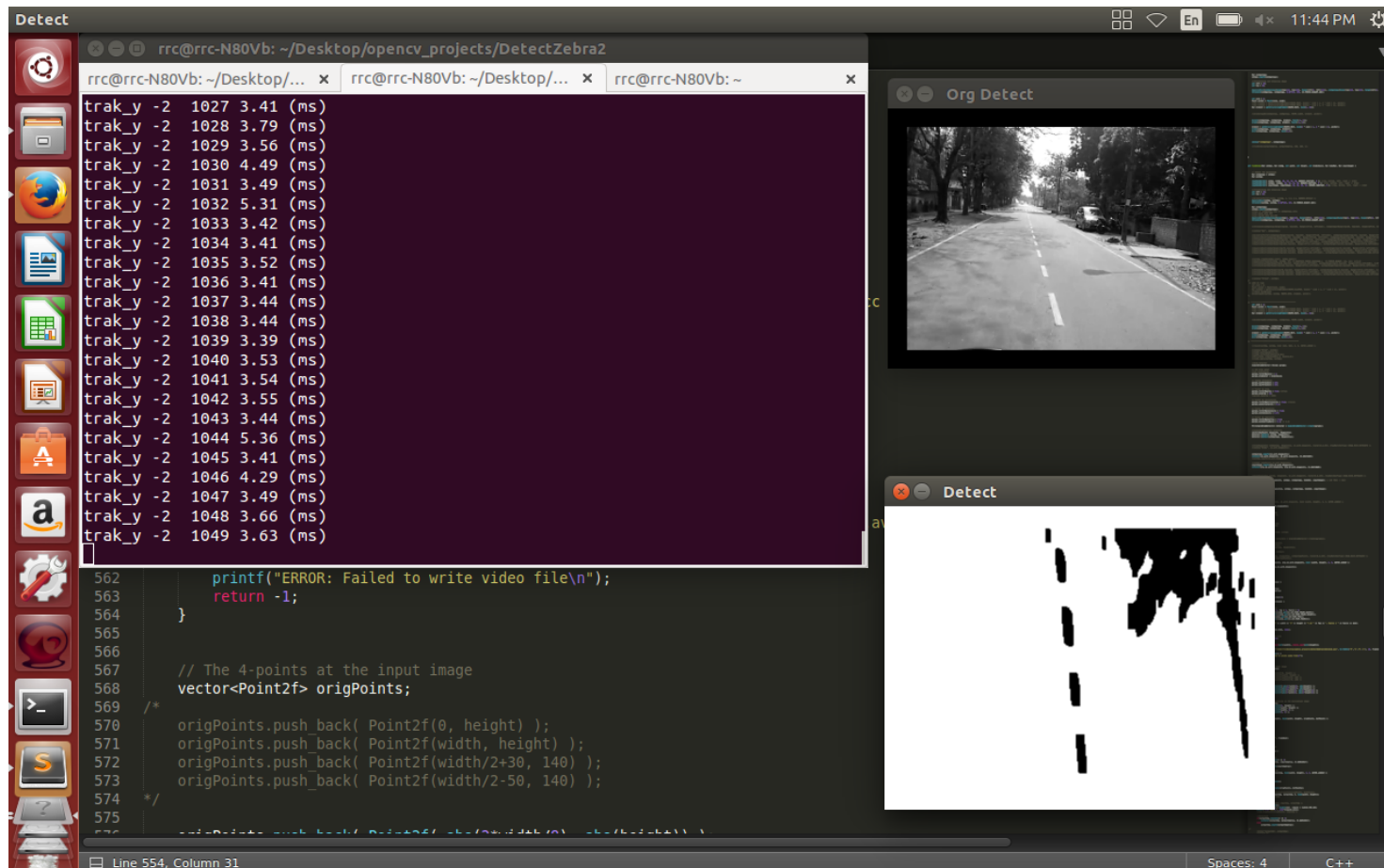
NALCO dataset in fixed IPM original(UP) vs processed(DOWN)

Algo 2
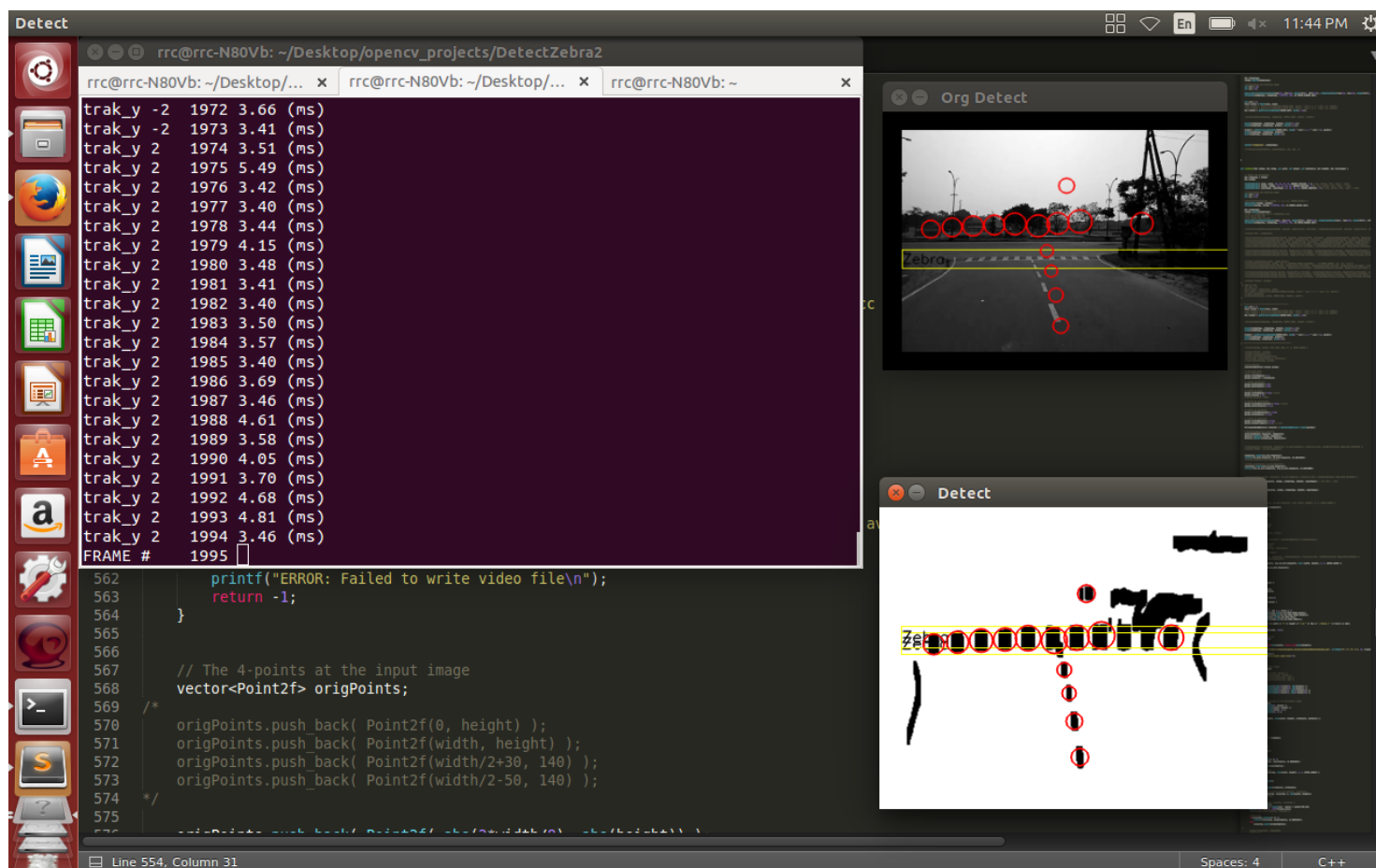
NALCO dataset with temporal tracking upto 3 frames)

Results

- INPUT:Lara3D, Lara3D1, Nalco, Urmi1
- OUTPUT: ZebraLara3D_5, ZebraLara3D1_5, ZebraNalco_10, ZebraUrmi_1