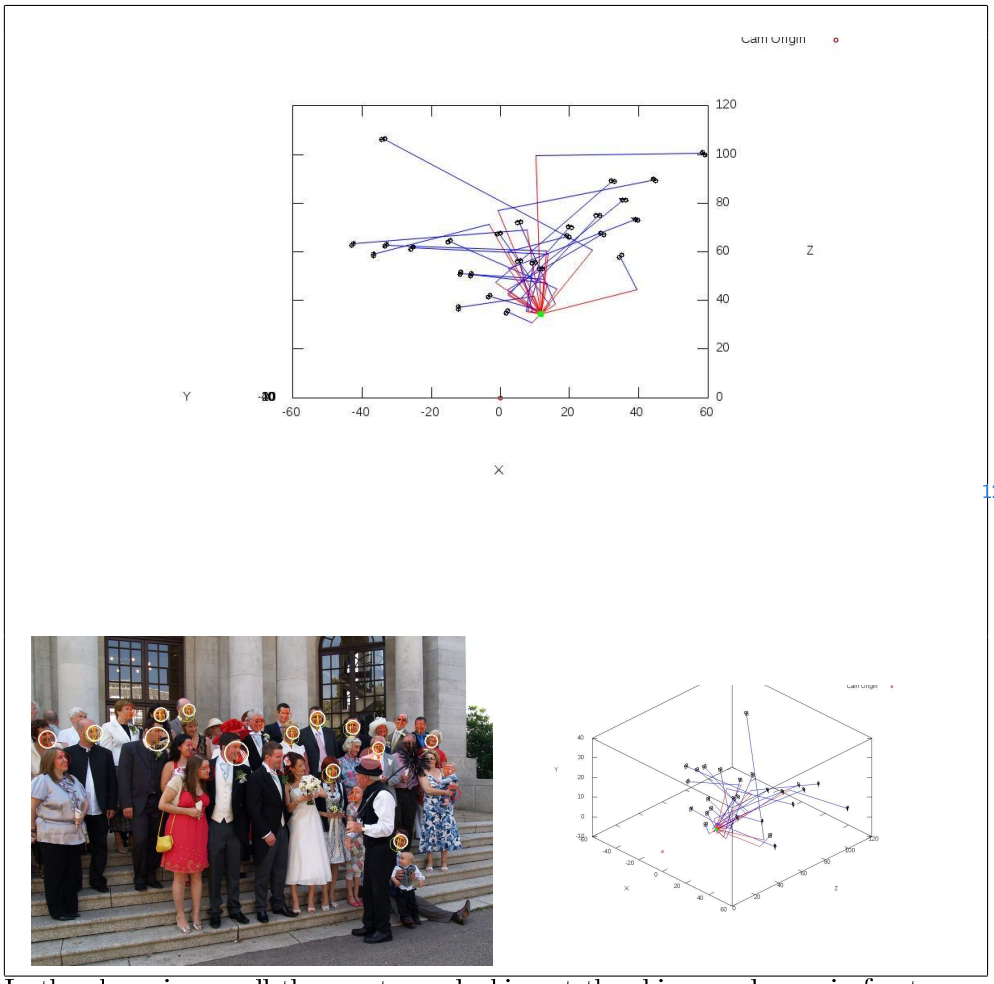
Detecting Mutual Awareness Events - Supplementary Material

Anonymous ECCV Workshop on Face Detection submission

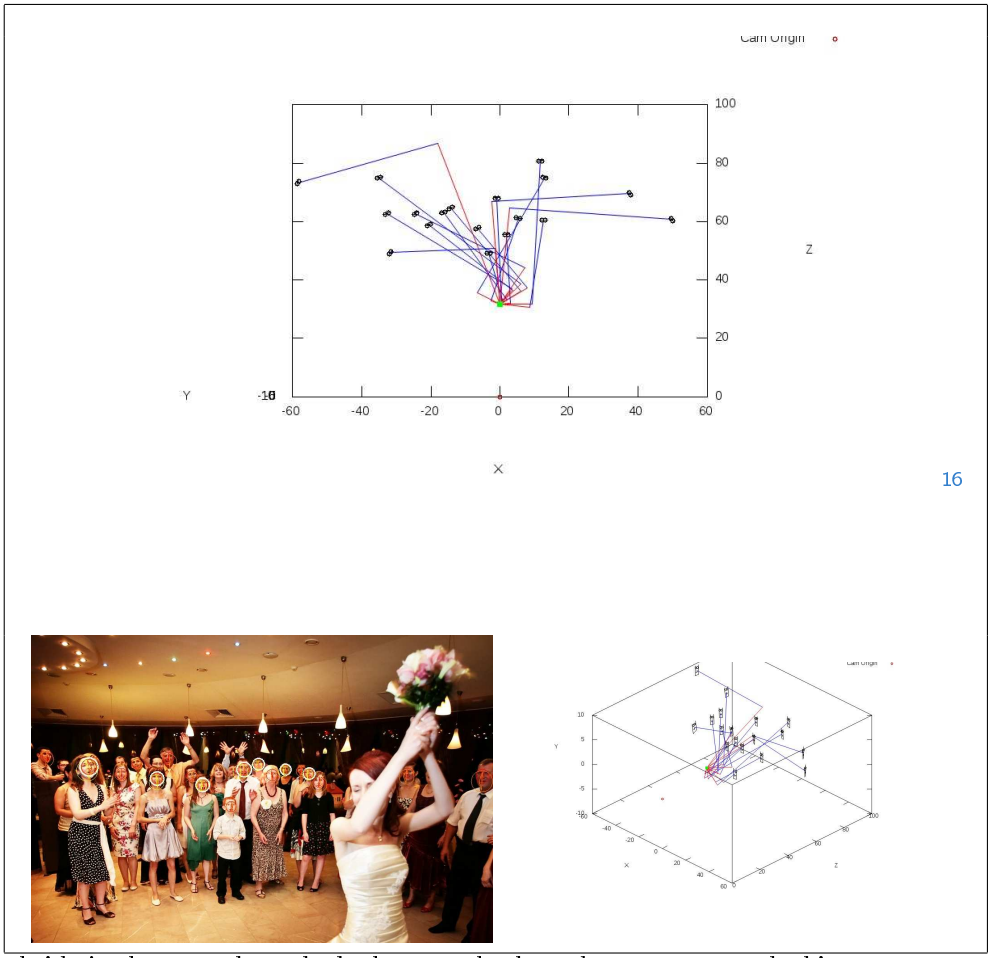
Paper ID 9

1 Estimating the VIOA

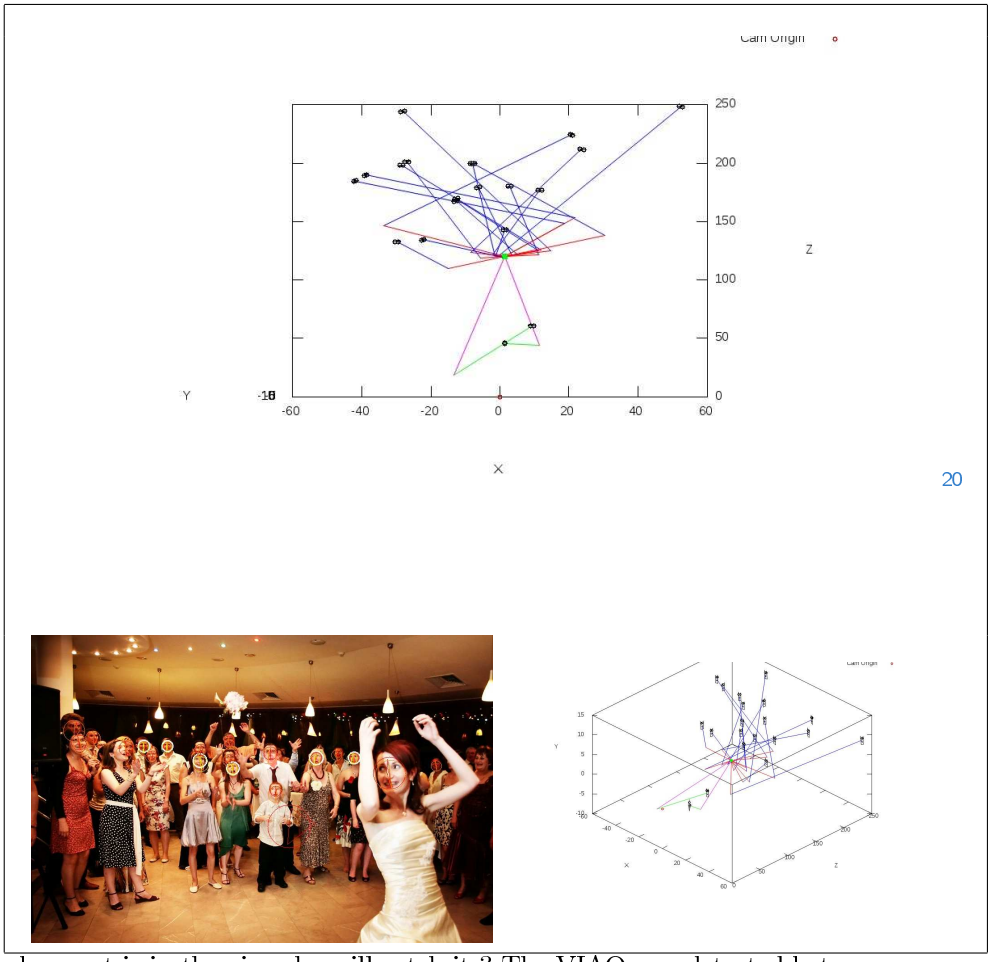
Few examples of applying the method to real images selected from the Internet. The VIOA was found in the right place or near it in several images. The noise in the output of the estimation of head pose and head size is the main source for errors. The number of observer is affecting the stability to recover the VIOA and the depth information under this noise. As can be seen from the examples, mutual awareness events are common and widespread.



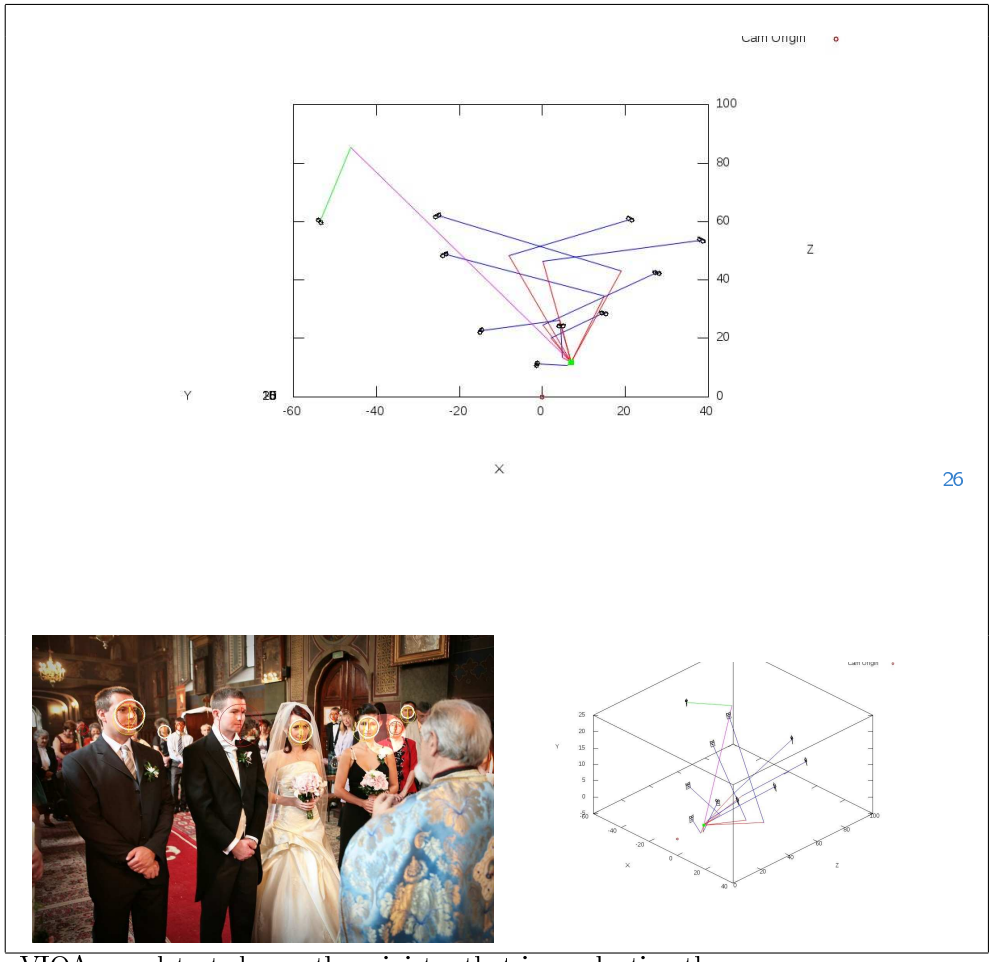
In the above image all the guests are looking at the chimney cleaner in front. The girl that is close to him is not looking at him but at the bride. The VIOA was detected very close to the chimney cleaner.



The bride is about to through the bouquet backwards, everyone are looking at it and expecting. The VIOA was detected in front of the group but slightly to the left of the bride.

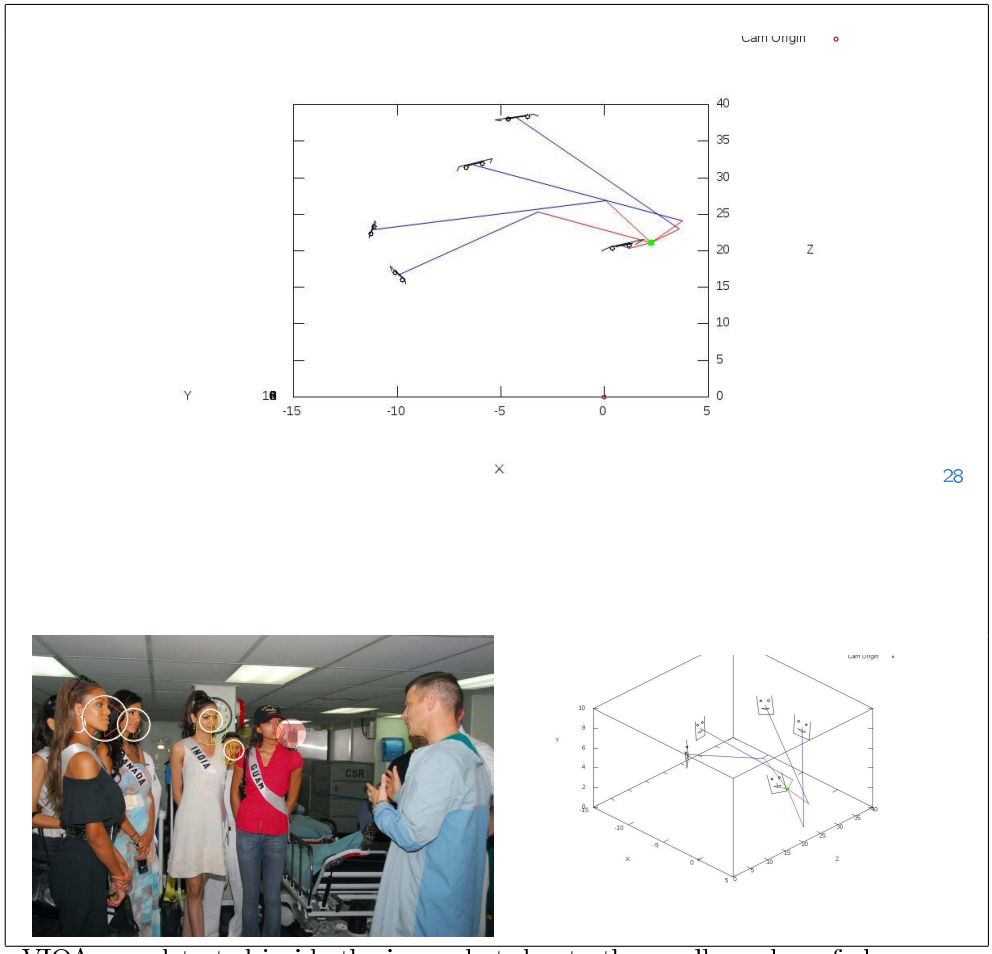


The bouquet is in the air, who will catch it ? The VIAO was detected between the bride and the guests. The person who is reaching his hand to catch, was found to be the closest to the detected VIOA. The recovered focal length is different from the previous image probably due to noise and that the X coordinate of the VIOA is near 0.

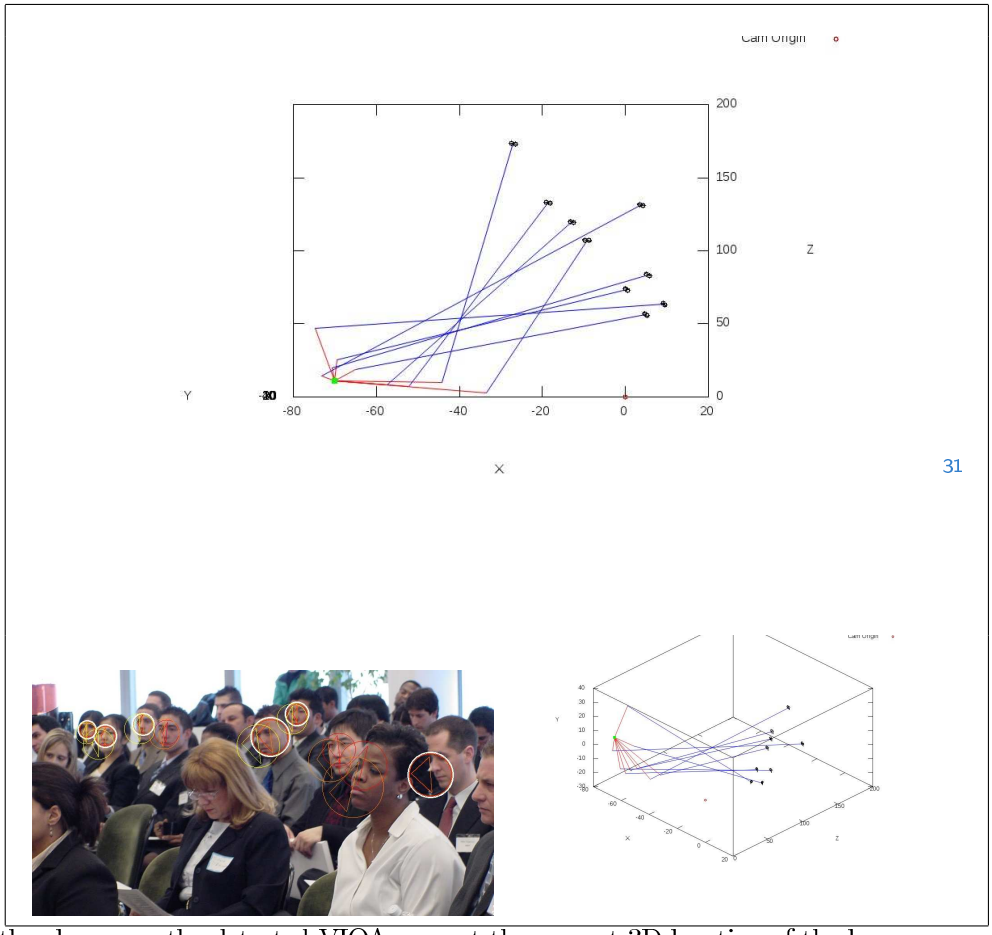


26 26

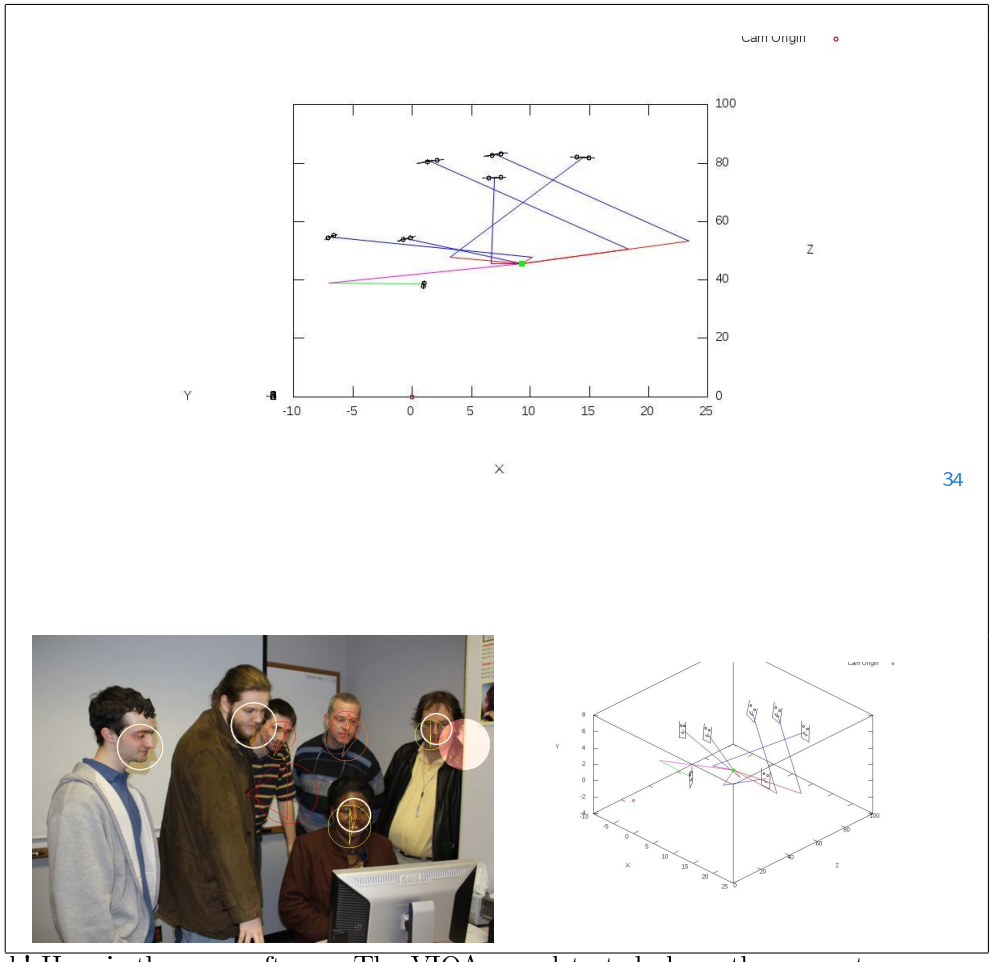
27 The VIOA was detected near the minister that is conducting the ceremony. 27



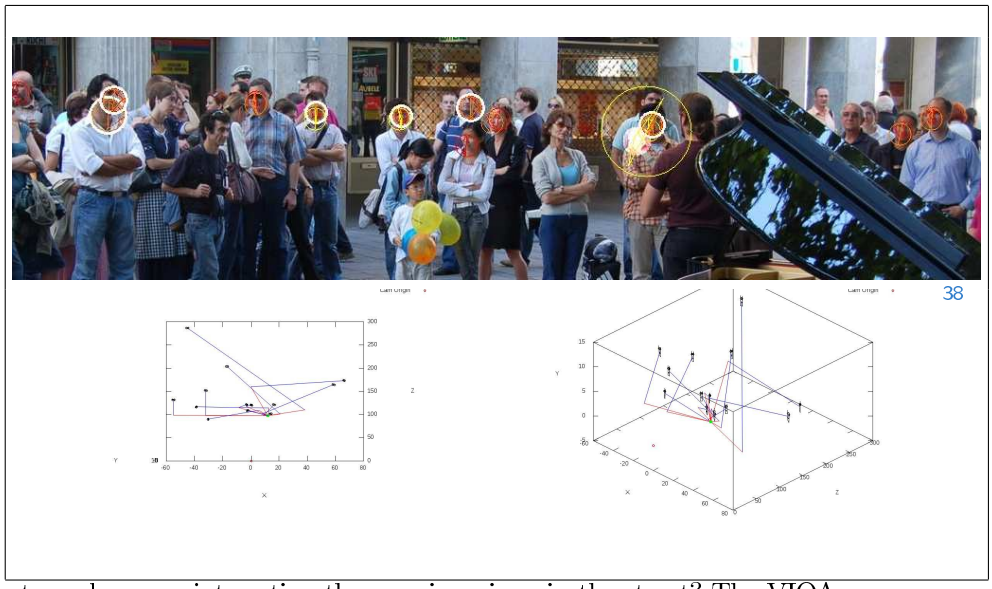
The VIOA was detected inside the image but due to the small number of observers not in the expected position.



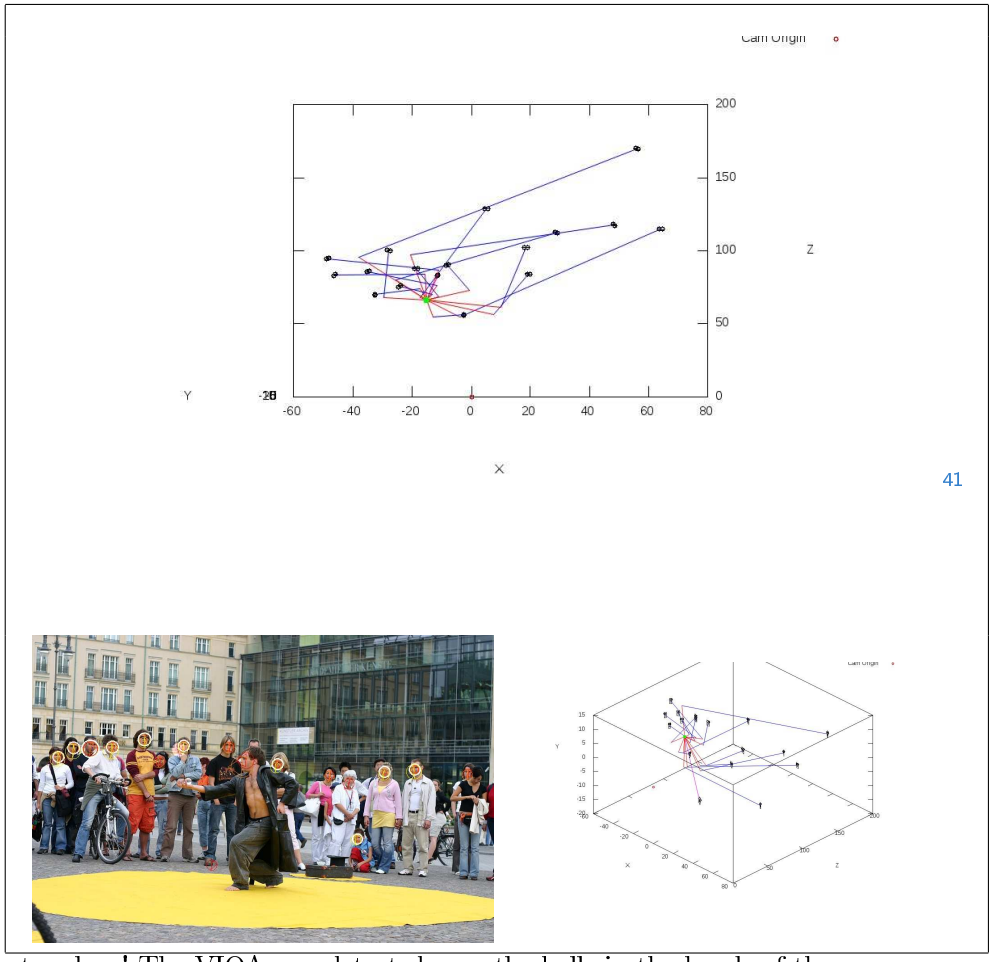
In the classroom the detected VIOA suggest the current 3D location of the lecturer.



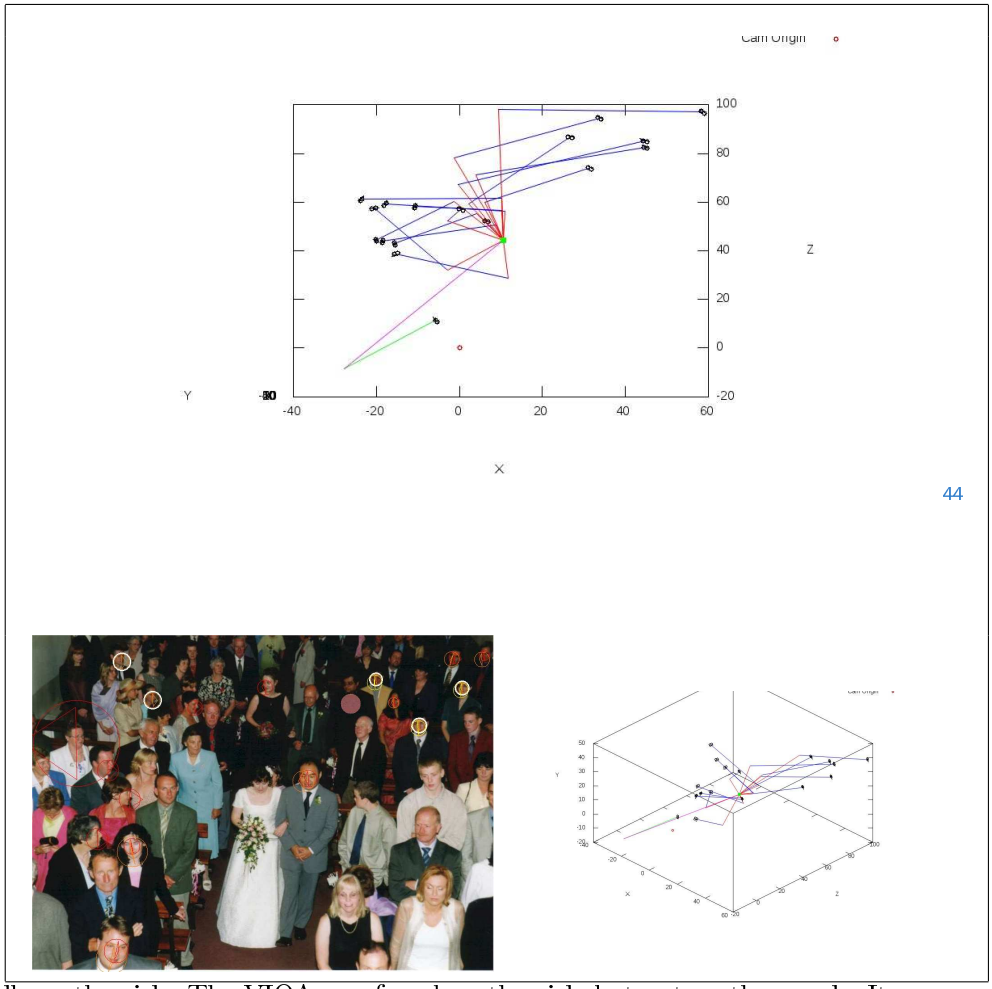
Look! Here is the new software. The VIOA was detected above the computer screen due to the missing information on the pitch angles of the observers. The head pose algorithm that was do not give this information accurately.



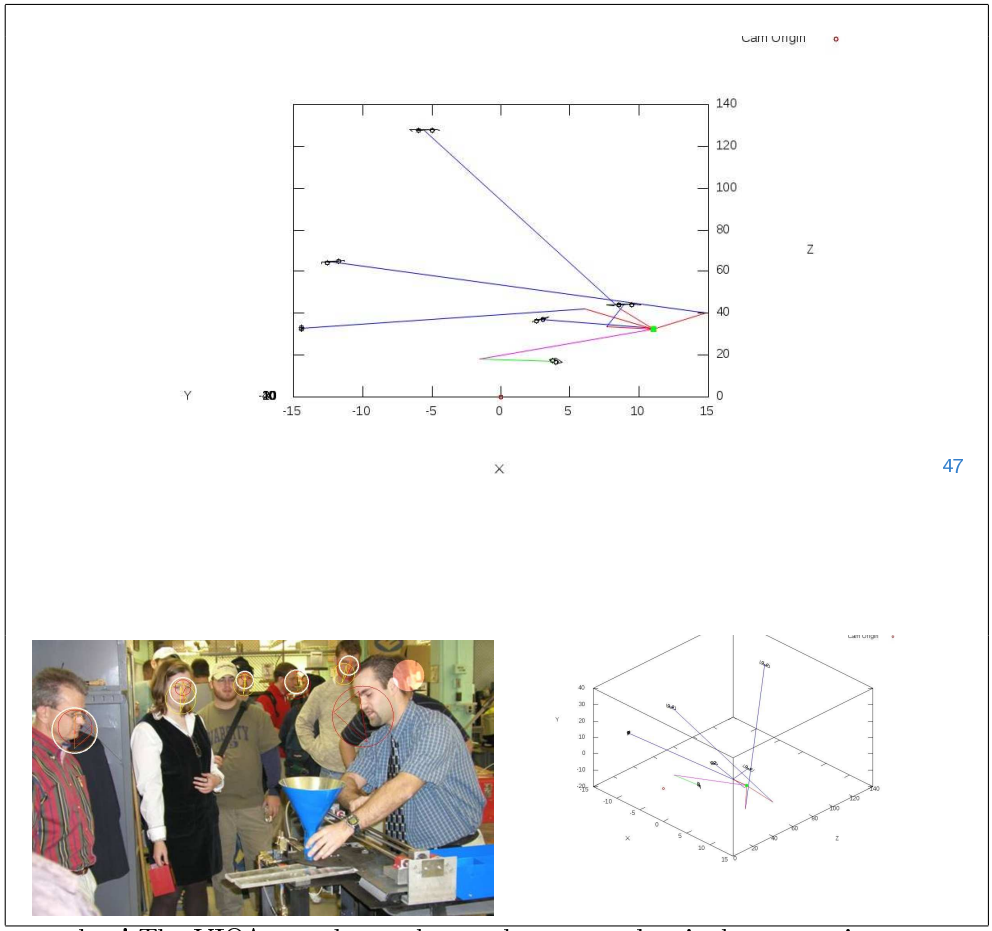
What can be more interesting than a wing piano in the street? The VIOA was detected close to the person that seems to be the performer.



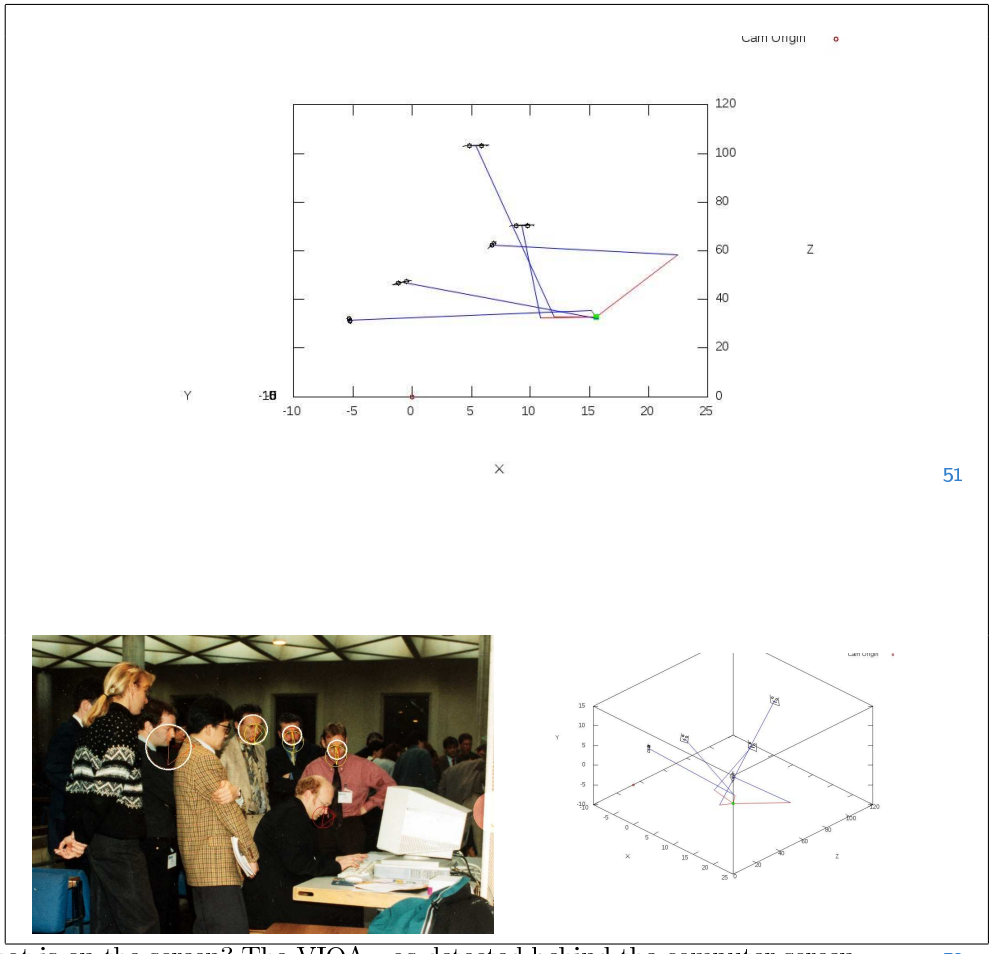
What a show! The VIOA was detected near the balls in the hands of the performer.



Walk up the aisle. The VIOA was found on the aisle but not on the couple. It seems that not all the detected observers are looking at the couple.



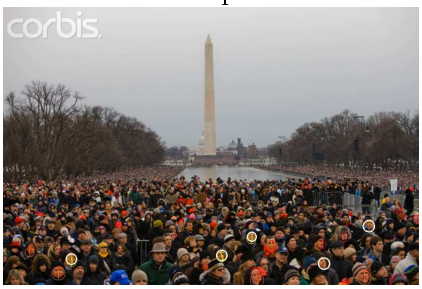
Not too close! The VIOA was detected near the person that is demonstrating. The number of observers is small and the location of the VIOA is not expected to be accurate.



51 51

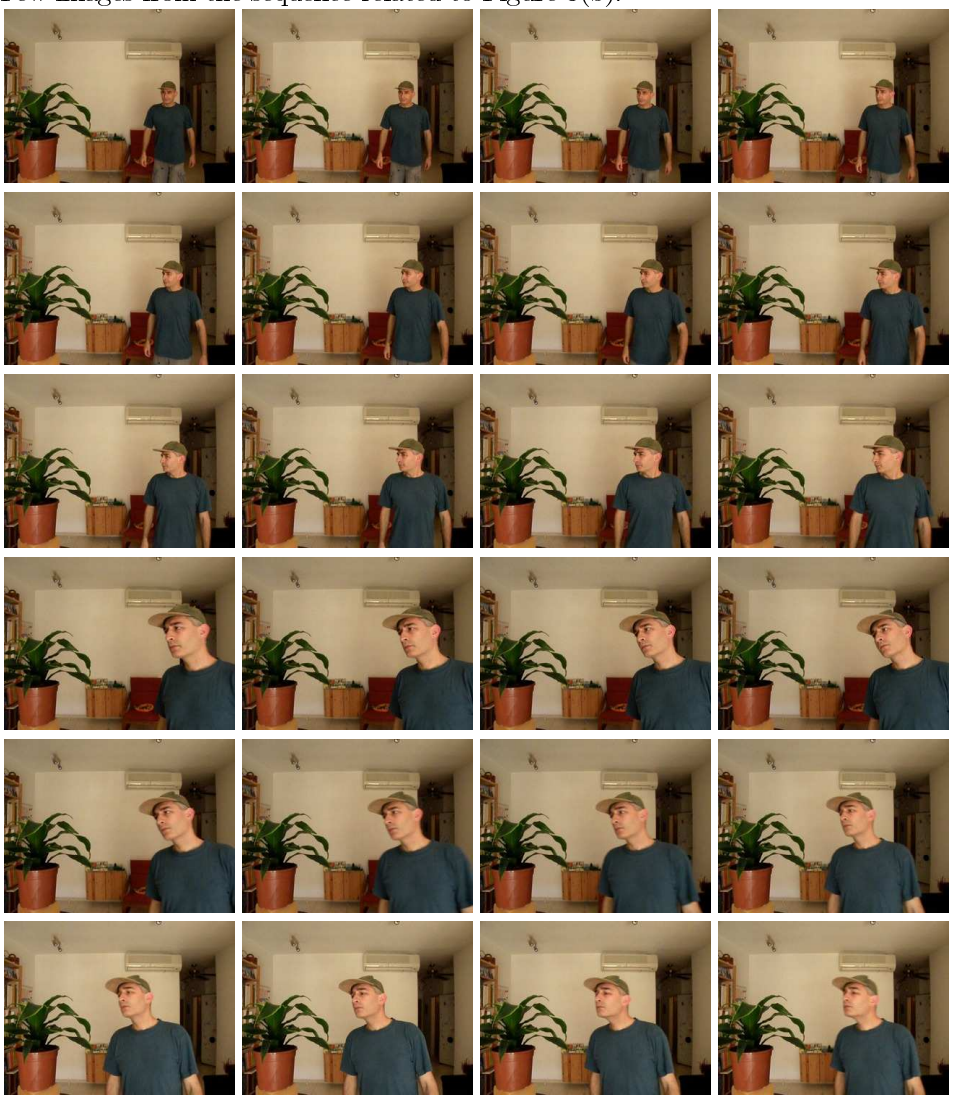
52 What is on the screen? The VIOA was detected behind the computer screen. 52

Few more examples:



2 Fixating While Moving

Few images from the sequence related to Figure 5(b).

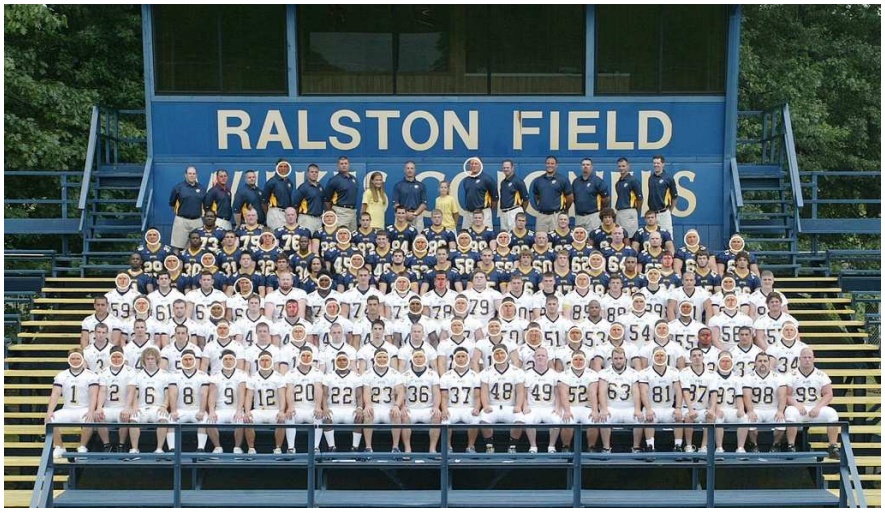


3 Detection of an MA Event

The images that were used in Figure 3(a), first the positive examples are presented and then the negative examples.

3.1 Positive Examples - Looking Towards the Camera

60 out of 97 are looking towards the camera (positive)



55 out of 60 are looking towards the camera (positive)

54 out of 81 are looking towards the camera (positive)

50 out of 79 are looking towards the camera (positive)

45 out of 51 are looking towards the camera (positive)

37 out of 47 are looking towards the camera (positive)

69

69

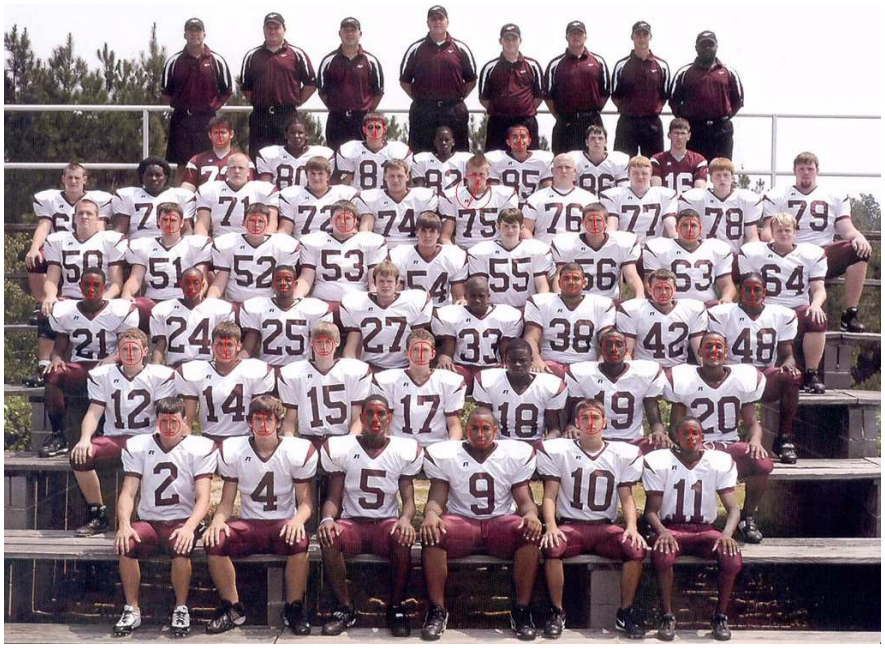
32 out of 69 are looking towards the camera (positive)

70

70

29 out of 39 are looking towards the camera (positive)

71



71

27 out of 27 are looking towards the camera (positive)

72

72

25 out of 29 are looking towards the camera (positive)

73  73

23 out of 29 are looking towards the camera (positive)

74 

74

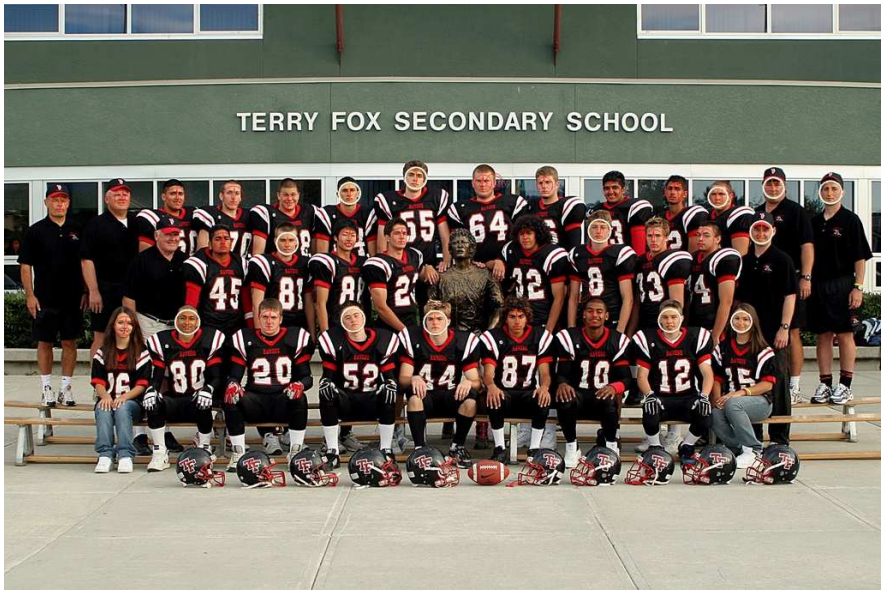
21 out of 24 are looking towards the camera (positive)

18 out of 21 are looking towards the camera (positive)

17 out of 33 are looking towards the camera (positive)

16 out of 23 are looking towards the camera (positive)

15 out of 18 are looking towards the camera (positive)



14 out of 39 are looking towards the camera (positive)

13 out of 28 are looking towards the camera (positive)

81

81

12 out of 20 are looking towards the camera (positive)

82

82

12 out of 22 are looking towards the camera (positive)

10 out of 33 are looking towards the camera (positive)

10 out of 21 are looking towards the camera (positive)

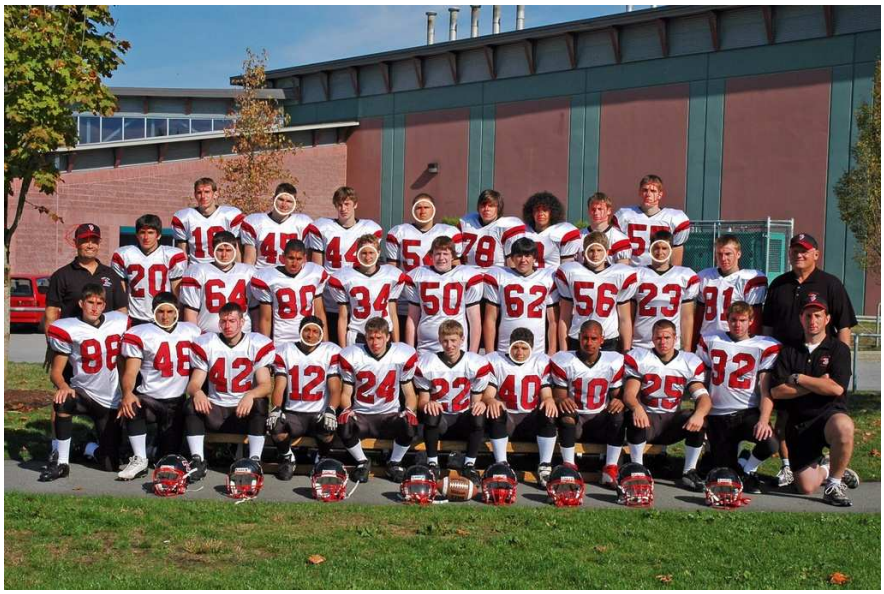
10 out of 17 are looking towards the camera (positive)

10 out of 19 are looking towards the camera (positive)

9 out of 12 are looking towards the camera (positive)

9 out of 14 are looking towards the camera (positive)

9 out of 14 are looking towards the camera (positive)



9 out of 29 are looking towards the camera (positive)

8 out of 22 are looking towards the camera (positive)

7 out of 14 are looking towards the camera (positive)

93 93

7 out of 12 are looking towards the camera (positive)

94 94

7 out of 8 are looking towards the camera (positive)

6 out of 10 are looking towards the camera (positive)

6 out of 15 are looking towards the camera (positive)

97

97

5 out of 7 are looking towards the camera (positive)

98

98

5 out of 15 are looking towards the camera (positive)

4 out of 15 are looking towards the camera (positive)

3 out of 7 are looking towards the camera (positive)

2 out of 3 are looking towards the camera (positive)

0 out of 10 are looking towards the camera (positive)

0 out of 8 are looking towards the camera (positive)

0 out of 4 are looking towards the camera (positive)

0 out of 17 are looking towards the camera (positive)

3.2 Negative Examples - Not Looking Towards the Camera

Most of the negative examples are expected to be classified correctly. A small number of dangling examples were taken when each group member is looking towards a different camera out of few cameras. The different cameras are in close positions when capturing the group.

15 out of 35 are looking towards the camera (negative)

10 out of 28 are looking towards the camera (negative)

8 out of 28 are looking towards the camera (negative)

7 out of 14 are looking towards the camera (negative)

5 out of 20 are looking towards the camera (negative)

3 out of 15 are looking towards the camera (negative)

117 117

0 out of 4 are looking towards the camera (negative)

0 out of 7 are looking towards the camera (negative)

0 out of 3 are looking towards the camera (negative)

120

120

0 out of 8 are looking towards the camera (negative)

121

121

0 out of 10 are looking towards the camera (negative)

0 out of 3 are looking towards the camera (negative)

0 out of 20 are looking towards the camera (negative)

0 out of 12 are looking towards the camera (negative)

0 out of 13 are looking towards the camera (negative)

126

126

0 out of 11 are looking towards the camera (negative)

127

127

0 out of 56 are looking towards the camera (negative)

128

128

0 out of 12 are looking towards the camera (negative)

129

129

0 out of 3 are looking towards the camera (negative)

0 out of 9 are looking towards the camera (negative)

0 out of 6 are looking towards the camera (negative)

0 out of 14 are looking towards the camera (negative)

0 out of 12 are looking towards the camera (negative)

0 out of 10 are looking towards the camera (negative)

0 out of 6 are looking towards the camera (negative)