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REVIEW of MASTER THESIS

Title: Person body height measurement by using surveillance cameras

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Comments:

In this master thesis is proposed a method to estimate the height of a person given a static camera and its calibration parameters. In concrete, this work implements two different ways to do such estimate of height. First method, detects the “head” and “feet” of the person for later by means of triangulation method obtain the measurement of height. Second method, uses the interpupillary distance to approximate the height of the person. Finally, these two methods are combined to obtain the final result. Fusion is done using Bayesian estimate and also using max-likelihood function. Several experiments are performed to evaluate quantitatively the height computing methods and the fusion techniques.

In general the thesis is well written and easy to follow providing detailed steps of all methodology used. However, some parts could benefit from some revision, specially in related work section. In Section 3, figure 3.1 is mentioned at the beginning but shown after a couple of pages, which difficult the comprehension. Also found small typo in equation 3.8.

The problem addressed in this master thesis can have several applications and the solutions given are reasonable. There are not too over complicated parts, and the idea of including another estimate of the height using face landmark features is interesting. All the work exposed demonstrates that the student needs to be familiar with different techniques. From image pre-processing, to be able to perform desired measurements of human height, to learning methods used in the fusion of height estimations. The work would have been more complete with a discussion on the results obtained in the experimental section.

Questions:

- 1) Between eq. 3.9 and eq. 3.10 is stated that height of person is obtained in cm. Why so? Which factor make to obtain height in cm and not in mm or meters?
- 2) In seq. 4 the error for Bayesian estimate and max-likelihood is much higher than in all of the other sequences. Which could be the cause for such different result?
- 3) Does the height of a person have an impact on the measured error?

Evaluation mark:

C- good