

Shape-based Pedestrian Detection

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(a)



(b)



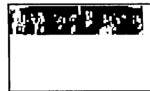
(c)



(d)



(a)



(b)



(c)



(d)

- ▶ Detecting pedestrians on an experimental autonomous vehicle (the ARGO project)
- ▶ Exploiting morphological characteristics (size, ratio, and shape) and vertical symmetry of human shape
- ▶ A first coarse detection from a monocular image
- ▶ Distance refinement using a stereo vision technique
- ▶ Temporal correlation using the results from the previous frame to correct and validate the current ones
- ▶ Integrated in the ARGO vehicle and tested in urban environments
- ▶ Successful detections of whole pedestrians present in the image at a distance ranging from 10 to 40 meters