

CLAIMS

[Claim 1] An image processing device that extracts information from a video image shot by a video device, comprising:

a congestion degree estimator that estimates a congestion degree in a shooting region in real time based on the video image;

a plurality of image analyzers that extracts information on an object other than a background from the video image using a plurality of image analysis techniques including a first analysis technique for real-time processing and a second analysis technique for non-real-time processing, the information on the object including information relating to a region of a person and a region of a left object;

a controller that selects an image analyzer to be used for image analysis from the plurality of image analyzers according to the estimated congestion degree; and

an image recorder that records the video image,

wherein the image analyzer acquires a video image for use in the image analysis from the image recorder according to historical information on a change in the congestion degree and performs image analysis by the second analysis technique.

[Claim 2] The image processing device according to claim 1, wherein

a plurality of the video devices may be provided,

a plurality of the congestion degree estimators is provided corresponding to the plurality of video devices to estimate respective congestion degrees in the video images, and

the controller selects the image analysis unit for use in the image analysis according to the respective congestion degrees in the video images from the plurality of video devices such that the second analysis technique is more prone to be selected as the congestion degrees are higher.

[Claim 3] The image processing device according to claim 1, wherein the congestion degree calculation unit included in the congestion degree estimator represents crowds by a heat map based on the video image and measures sizes of the crowds and congestion degrees in the individual crowds.

[Claim 4] The image processing device according to claim 1, wherein the image analyzer includes a congestion-time video analysis unit that analyzes an input image with a high congestion degree and a normal-time video analysis unit that analyzes an input image with a low congestion degree, each of the units performs real-time image analysis, high computing performance is distributed to the congestion-time video analysis unit and relatively low computing performance is distributed to the normal-time video analysis unit.