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(54) Title: SYSTEMS AND METHODS FOR PARALLAX DETECTION AND CORRECTION IN IMAGES CAPTURED USING ARRAY CAMERAS

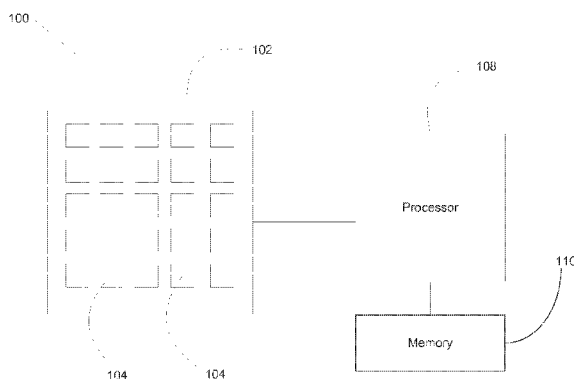


FIG. 1

(57) Abstract: Systems in accordance with embodiments of the invention can perform parallax detection and correction in images captured using array cameras. Due to the different viewpoints of the cameras, parallax results in variations in the position of objects within the captured images of the scene. Methods in accordance with embodiments of the invention provide an accurate account of the pixel disparity due to parallax between the different cameras in the array, so that appropriate scene-dependent geometric shifts can be applied to the pixels of the captured images when performing super-resolution processing. In several embodiments, detecting parallax involves using competing subsets of images to estimate the depth of a pixel location in an image from a reference viewpoint. In a number of embodiments, generating depth estimates considers the similarity of pixels in multiple spectral channels. In certain embodiments, generating depth estimates involves generating a confidence map indicating the reliability of depth estimates.

