Lossless Image Compression Using Causal Block Matching and 3D Collaborative Filtering

Published date: Nov. 23, 2015

Technology description

Invention
This technology is a novel predictor that leverages non-local structure similarities to de-noise and de-blur images by extending block-matching and 3D collaborative filtering to image prediction and compression.
Background
Over the last few decades, substantial progress has been made in estimation methods that are adapted to the local structure in multidimensional image and video data. Block-matching and 3D collaborative filtering are algorithms developed in the last decade to aid in image de-noising, rendering older methods obsolete.

Application area

Incorporation into a codec could provide excellent compression performance for image and video compression.
Satellite imaging
Medical imaging

Advantages

Time-dependent; addresses the issue of time-delay and increased resource use
De-noises and de-blurs images

Institution

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