

Denoising from weird noise using a tree

Imagine you have very strange noise, and you can simulate it

You want to denoise

Strategy:

- Take many images, and create (noisy – clean) pairs

- Carve into patches and build a HKM tree using only the noisy patches

 - (but keep the clean patch – so each data item is (noisy – clean) but the clusters, etc are formed using noisy alone)

- To denoise:

 - carve up noisy image into patches

 - walk the tree with the noisy patches

 - at leaf, substitute the clean version of the best match

Think of this as image-to-image mapping

You could do:

- image to edge map (fairly well)

- image to normal map (rather badly)

- quantized image to image

You'd have a lot of trouble with:

- edge map to image

- image to depth map