# Fast, Robust Image Registration for Compositing High Dynamic Range Photographs from Handheld Exposures

* Designed for HDR – optimized for images with different overall value but same color profile
* Operates on grayscale (or green channel)
* Edge detection is not effective on images with different values (such as HDR) might still be effective for RGB images
* Constructs a median threshold bitmap (MTB), which is a binary image (1 bit per pixel) thresholded at the image’s median value. The value of this is fast operation (using integer operations to cover several pixels at a time) and that it is value independent.
* Determines similarity by XORing MTB with translated MTB.
* Masks noise out of XOR result using two masks (one from each of XOR inputs) that discard pixels close in value to the median.
* Advantages
  + Very efficient
  + Immune to differences in exposure/brightness
* Disadvantages
  + Designed for HDR images; may not apply well to RGB images
  + Efficiency advantages are mostly relevant on embedded devices (cameras/phones) and MatLab’s internal optimization of matrix operations further negates advantage

# High Dynamic Range Imaging with the Android Platform

* Based on above, but more rotation-tolerant and purportedly faster
* These people don’t seem to properly understand the above paper. Their “optimization” discards the optimizations that the above author gets from using word-wise logic operations.
* Divides the image into segments, then selects three using SURF to find those with highest number of identifiable features.
* Performs above algorithm on those three segments to determine overall image translation and rotation.

# My Notes

* Cropping 10% from each side for processing to get rid of borders, padding, and distortion.
* MTB is not effective because the three images all look different