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Can we measure beauty? Computational evaluation of coral reef aesthetics

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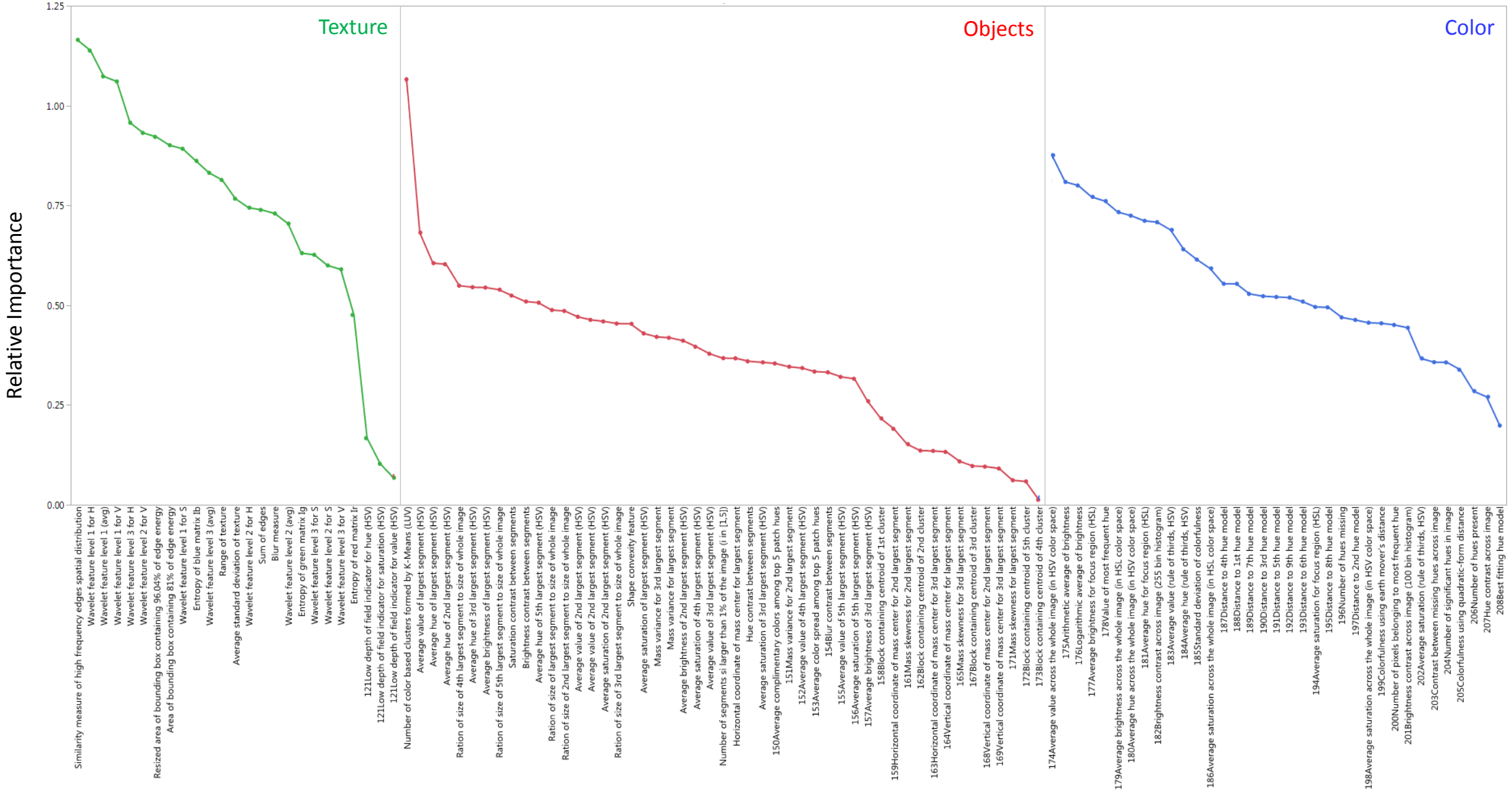
Relative Importance
1.25
1.00
0.75
0.50
0.25
0.00
Texture
Objects
Color
Similarity measure of high frequency edges spatial distribution
Wavelet feature level 1 for H
Wavelet feature level 1 (avg)
Wavelet feature level 1 for V
Wavelet feature level 3 for H
Wavelet feature level 2 for V
Resized area of bounding box containing 96.04% of edge energy
Area of bounding box containing 81% of edge energy
Wavelet feature level 1 for S
Entropy of blue matrix Ib
Wavelet feature level 3 (avg)
Range of texture
Average standard deviation of texture
Wavelet feature level 2 for H
Sum of edges
Blur measure
Wavelet feature level 2 (avg)
Entropy of green matrix Ig
Wavelet feature level 3 for S
Wavelet feature level 2 for S
Wavelet feature level 3 for V
Entropy of red matrix Ir
121Low depth of field indicator for hue (HSV)
121Low depth of field indicator for saturation (HSV)
121Low depth of field indicator for value (HSV)
Number of color based clusters formed by K-Means (LUV)
Average value of largest segment (HSV)
Average hue of largest segment (HSV)
Average hue of 2nd largest segment (HSV)
Ration of size of 4th largest segment to size of whole image
Average hue of 3rd largest segment (HSV)
Average brightness of largest segment (HSV)
Ration of size of 5th largest segment to size of whole image
Saturation contrast between segments
Brightness contrast between segments
Average hue of 5th largest segment (HSV)
Ration of size of largest segment to size of whole image
Ration of size of 2nd largest segment to size of whole image
Average value of 2nd largest segment (HSV)
Average value of 2nd largest segment (HSV)
Average saturation of 2nd largest segment (HSV)
Ration of size of 3rd largest segment to size of whole image
Shape convexity feature
Average saturation of largest segment (HSV)
Mass variance for 3rd largest segment
Mass variance for largest segment
Average brightness of 2nd largest segment (HSV)
Average saturation of 4th largest segment (HSV)
Average value of 3rd largest segment (HSV)
Number of segments si larger than 1% of the image (i in [1,5])
Horizontal coordinate of mass center for largest segment
Hue contrast between segments
Average saturation of 3rd largest segment (HSV)
150Average complimentary colors among top 5 patch hues
151Mass variance for 2nd largest segment
152Average value of 4th largest segment (HSV)
153Average color spread among top 5 patch hues
154Blur contrast between segments
155Average value of 5th largest segment (HSV)
156Average saturation of 5th largest segment (HSV)
157Average brightness of 3rd largest segment (HSV)
158Block containing centroid of 1st cluster
159Horizontal coordinate of mass center for 2nd largest segment
161Mass skewness for 2nd largest segment
162Block containing centroid of 2nd cluster
163Horizontal coordinate of mass center for 3rd largest segment
164Vertical coordinate of mass center for largest segment
165Mass skewness for 3rd largest segment
167Block containing centroid of 3rd cluster
168Vertical coordinate of mass center for 2nd largest segment
169Vertical coordinate of mass center for 3rd largest segment
171Mass skewness for largest segment
172Block containing centroid of 5th cluster
173Block containing centroid of 4th cluster
174Average value across the whole image (in HSV color space)
175Arithmetic average of brightness
176Logarithmic average of brightness
177Average brightness for focus region (HSL)
178Value of most frequent hue
179Average brightness across the whole image (in HSL color space)
180Average hue across the whole image (in HSV color space)
181Average hue for focus region (HSL)
182Brightness contrast across image (255 bin histogram)
183Average value (rule of thirds, HSV)
184Average hue (rule of thirds, HSV)
185Standard deviation of colorfulness
186Average saturation across the whole image (in HSL color space)
187Distance to 4th hue model
188Distance to 1st hue model
189Distance to 7th hue model
190Distance to 3rd hue model
191Distance to 5th hue model
192Distance to 9th hue model
193Distance to 6th hue model
194Average saturation for focus region (HSL)
195Distance to 8th hue model
196Number of hues missing
197Distance to 2nd hue model
198Average saturation across the whole image (in HSV color space)
199Colorfulness using earth mover's distance
200Number of pixels belonging to most frequent hue
201Brightness contrast across image (100 bin histogram)
202Average saturation (rule of thirds, HSV)
203Contrast between missing hues across image
204Number of significant hues in image
205Colorfulness using quadratic-form distance
206Number of hues present
207Hue contrast across image
208Best fitting hue model