Nanopublication — Computational Image Analysis - AQC0863

by Arnaud Quercy · F# Minor - Research on Harmony - Variation 6 · 2025

Claim 1: Computational Image Analysis - AQC0863

> K-means clustering analysis [3] (10 colors) performed on artwork F# Minor [1] - Research on Harmony - Variation 6 (AQC0863) [2] by Arnaud Quercy [2] on 2025-12-09. Documentation includes: color families, texture roughness, brightness distribution, spatial coherence.

CONTEXT

Analysis performed according to MMIDS-CMP-2025 [3] includes four metric categories: (1) Color distribution via k-means (10 colors), (2) Texture analysis using Haralick features, (3) Brightness and contrast measurements, (4) Spatial pattern characterization. Source image [5]: 2403x3204 pixels. Analysis date: 2025-12-09.

COLOR ANALYSIS

Rank	Color	Hex	%	Family	Name
1		DED9C7	25.8	yellow	lightgray
2		C2C9C1	16.8	yellow-green	silver
3		ABB9B3	14.6	green	steel gray
4		528491	9.3	blue-green	blue gray
5		9EAB95	9.0	yellow-green	steel gray
6		C6BDA2	8.6	yellow-orange	tan
7		889373	5.9	yellow-green	gray
8		B49B72	3.5	yellow-orange	ochre
9		687358	3.4	yellow-green	dimgray
10		353732	3.1	gray	darkslategray
11		F0B39E	0.3	orange	burlywood [Accent]
12		EEA89F	0.3	red-orange	burlywood [Accent]

Color Families:

Family	%
yellow-green	35.1
yellow	25.8
green	14.6
yellow-orange	12.0
blue-green	9.3
gray	3.1
orange	0.3
red-orange	0.3

Accent Colors:

Hex	Family	Name	Chroma
F0B39E	orange	burlywood	26.9
EEA89F	red-orange	burlywood	29.2

TEXTURE ANALYSIS

Metric	Value
Global Roughness	0.158
Mean Local Roughness	0.017
Roughness Uniformity	0.015
Edge Density	0.091
Mean Gradient Magnitude	0.155
Gradient Variance	0.029
Gradient Smoothness	0.0
Directional Coherence	0.007
Pattern Complexity	0.115
Pattern Repetition	1.0
Detail Frequency Ratio	0.607
Spatial Variation	0.061
Texture Consistency	0.645

BRIGHTNESS & CONTRAST ANALYSIS

Metric	Value
Mean Brightness	0.695
Brightness Variance	0.158
Brightness Uniformity	0.772
Brightness Skewness	-1.186
Brightness Entropy	7.044
Rms Contrast	0.158
Michelson Contrast	1.0
Weber Contrast	0.461
Mean Local Contrast	0.019
Contrast Uniformity	0.222
Dynamic Range	1.0
Effective Dynamic Range	0.467
Shadow Percentage	3.3
Midtone Percentage	28.325
Highlight Percentage	68.376
Shadow Clipping	0.0
Highlight Clipping	0.0
Tonal Balance	0.0
Fine Contrast	0.009
Medium Contrast	0.024
Coarse Contrast	0.039
Multiscale Contrast Ratio	0.232
Edge Contrast	0.155
Contrast Clustering	0.355

SPATIAL DISTRIBUTION ANALYSIS

Metric	Value
Spatial Coherence	0.735
Color Clustering	0.801

Metric	Value
Color Transition Smoothness	0.617
Transition Uniformity	0.812
Sharp Transition Ratio	0.1
Transition Directionality	0.009
Mean Saturation	0.16
Saturation Variance	0.015
Low Saturation Ratio	0.871
Medium Saturation Ratio	0.129
High Saturation Ratio	0.0
Saturation Clustering	1.0
Hue Concentration	0.44
Complementary Balance	0.056
Analogous Dominance	0.625
Temperature Bias	-0.031

Methodology

This analysis employs standardized computational methods for objective image characterization. Color extraction uses k-means clustering algorithm. Texture analysis applies Haralick feature extraction. Brightness metrics include mean, variance, and distribution analysis. Spatial patterns are characterized through coherence and clustering measurements. All methods are deterministic and reproducible. Analysis performed by Multimodal Institute's computational imaging systems.

REFERENCES

[1] Arnaud Quercy (2025). F# Minor - Research on Harmony - Variation 6 — Catalog raisonné. https://arnaudquercy.art/en/catalogue-raisonne/AQC0863.html

[2] Quercy, A. (2025). F# Minor - Research on Harmony - Variation 6 - Gallery. https://artquamanima.com/en/artworks/2025/01/f-minor-research-on-harmony-variation-6_9ju.html

[3] Quercy, A. (2025). Computational Image Analysis Standard - MMIDS-CMP-2025 https://multimodal.institute/en/publications/2025/11/mmids-cmp-2025-computational-image-analysis-standard-dg1.html

EPISTEMIC PROFILE

Claim type	computational analysis
Voice	third person
Epistemic status	empirical measurement
Methodology	computational analysis
Certainty	high

CHECKSUM (SHA-256)

74e486d21a2fd3db29b7f1c5705e382100dd5da6b29aef-d8701f289b2f1006a8

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