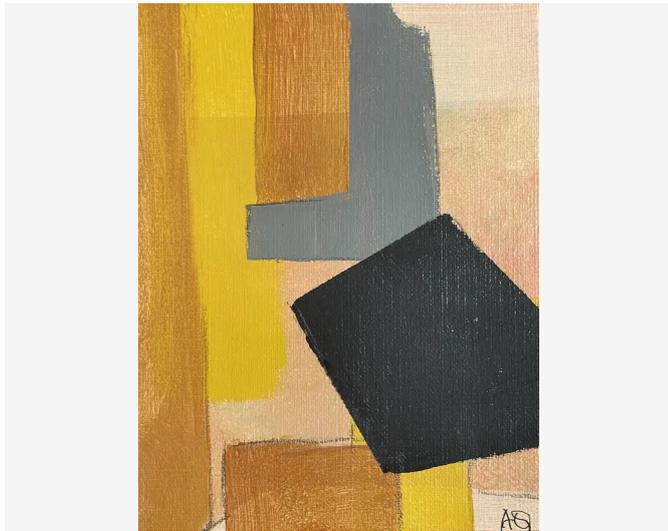# Nanopublication — Computational Image Analysis - AQC0520

by Arnaud Quercy · D Major9 - Research on Harmony · 2024

Claim 1: Computational Image Analysis - AQC0520

> K-means clustering analysis [3] (10 colors) performed on artwork D Major9 - Research [1] on Harmony (AQC0520) [2] by Arnaud Quercy [2] on 2026-02-04. 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]: 2504x3338 pixels. Analysis date: 2026-02-04.

COLOR ANALYSIS

Rank	Color	Hex	%	Family	Name
1		DDB72C	14.8	yellow-orange	goldenrod
2		2E3231	14.5	gray	darkslategray
3		BE8536	13.4	orange	peru
4		797F7B	12.5	gray	gray
5		AA7029	9.8	orange	burnt sienna
6		D4AB7A	7.4	yellow-orange	tan
7		ECD5B5	7.4	yellow-orange	wheat
8		D39B4A	7.1	yellow-orange	sandybrown
9		E0BF95	7.1	yellow-orange	burlywood
10		414544	6.1	gray	darkslategrey
11		1C0D07	0.3	red-orange	black [Accent]
12		7E733B	0.3	yellow	olivedrab [Accent]

Color Families:

Family	%
yellow-orange	43.7
gray	33.1
orange	23.2
red-orange	0.3
yellow	0.3

Accent Colors:

Hex	Family	Name	Chroma
1C0D07	red-orange	black	7.8
7E733B	yellow	olivedrab	32.2

TEXTURE ANALYSIS

Metric	Value
Global Roughness	0.203
Mean Local Roughness	0.018
Roughness Uniformity	0.018
Edge Density	0.087
Mean Gradient Magnitude	0.168
Gradient Variance	0.04
Gradient Smoothness	0.0
Directional Coherence	0.017
Pattern Complexity	0.104
Pattern Repetition	1.0
Detail Frequency Ratio	0.622
Spatial Variation	0.143
Texture Consistency	0.492

BRIGHTNESS & CONTRAST ANALYSIS

Metric	Value
Mean Brightness	0.545
Brightness Variance	0.203
Brightness Uniformity	0.627
Brightness Skewness	-0.454
Brightness Entropy	7.288
Rms Contrast	0.203
Michelson Contrast	1.0
Weber Contrast	0.735
Mean Local Contrast	0.021
Contrast Uniformity	0.122
Dynamic Range	1.0
Effective Dynamic Range	0.647
Shadow Percentage	20.133
Midtone Percentage	44.05
Highlight Percentage	35.817
Shadow Clipping	0.0
Highlight Clipping	0.003
Tonal Balance	0.035

Metric	Value
Fine Contrast	0.009
Medium Contrast	0.027
Coarse Contrast	0.045
Multiscale Contrast Ratio	0.195
Edge Contrast	0.168
Contrast Clustering	0.508

SPATIAL DISTRIBUTION ANALYSIS

Metric	Value
Spatial Coherence	0.714
Color Clustering	0.494
Color Transition Smoothness	0.574
Transition Uniformity	0.74
Sharp Transition Ratio	0.1
Transition Directionality	0.019
Mean Saturation	0.431
Saturation Variance	0.092
Low Saturation Ratio	0.411
Medium Saturation Ratio	0.261
High Saturation Ratio	0.327
Saturation Clustering	1.0
Hue Concentration	0.993
Complementary Balance	0.0
Analogous Dominance	0.999
Temperature Bias	0.999

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 (2024). D Major9 - Research on Harmony — Catalog raisonné. https://arnaudquercy.art/en/catalogue-raisonne/AQC0520.html https://arnaudquercy.art/fr/catalogue-raisonne/AQC0520.html

[2] Quercy, A. (2024). D Major9 - Research on Harmony - Gallery. https://artquamanima.com/en/artworks/2024/01/d-major9-research-on-harmony_5ug.html

[3] Quercy, A. (2025). Computational Image Analysis Standard - MMIDS-CMP-2025 https://multimodal.institute/en/publications/2025/10/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)

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0afcfa1d-
facb8384ac110806aaf341eaa59b15249d77b6eff7e31e593aa61c10
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Artist	Arnaud Quercy
Date	2024
Collection	Synesthetic Explorations
Certificate	20240220-0016
Asset code	AQC0520
Version	1
Published	2026-03-04