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CHORD PAINTING

和弦绘画

(English Chinese Bilingual Version)

(中、英双语版)

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Overview Of Chord Language; 和弦语言综述

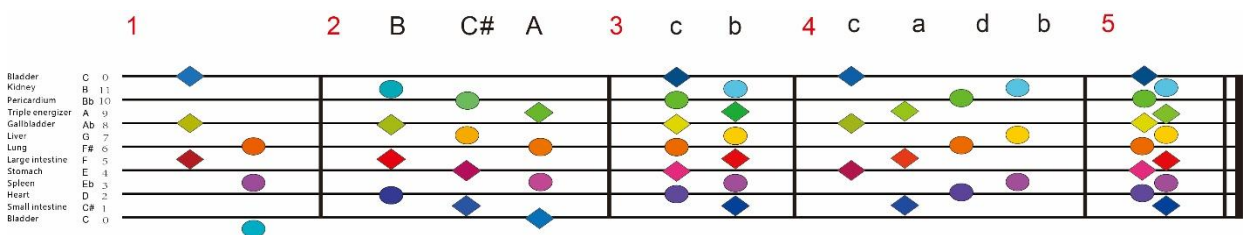
25 届世界哲学大会论文；Papers of the XXV World Congress of Philosophy

和弦是离散频率 ($n \cdot f, f/n$) 的特征子集，每一个和弦都有其专属的频谱指纹，并映射到相应的和弦语义集合。基于这一频谱-语义“映射协议”，和弦跨域生成相干的“和弦场”——时间域（和弦进行-音乐）、空间域（膜-弦结构-绘画）、生命域（经络系统）。

和弦与量子化是离散结构 ($n \cdot f, n \cdot E$) 的不同观察者角度：和弦/调性与非和弦/无调性。二者一体两面，以数学为纽带，从和弦观察者视角看：当离散结构被编码为和弦，便获得和弦的语法-语义逻辑，成为自然编码语言——时空与生命的生成语言。

Chords are characteristic subsets of discrete frequencies ($n \cdot f, f/n$), with each chord having its own unique spectral fingerprint, which maps to the corresponding set of chord semantics. Based on this spectrum-semantics “mapping protocol,” chords generate coherent “chord fields” across domains—temporal domain (chord progression-music), spatial domain (membrane-string structure-painting), and life domain (meridian system).

Chords and quantization represent different observer perspectives on discrete structures ($n \cdot f, n \cdot E$): chords/tonality and non-chords/atonality. They are two sides of the same coin, linked by mathematics. From the chord observer's perspective: when discrete structures are encoded as chords, they acquire the grammatical-semantic logic of chords, becoming a natural encoding language—a generative language of spacetime and life.



基本和弦表：1-1、大三和弦（闭弦），1-2、小三和弦（开弦），2、减七和弦（膜），3、全音阶和弦（膜），4、增三和弦（膜），5、半音阶和弦（膜）。

和弦频谱公式： $n \cdot f, f/n, H^n \cdot f, f/H^n$ ($H=1.059463, n \in \mathbb{Z}$)

符号：◆=+ 音符，●=- 音符，音符色=色荷

频谱坐标：mod12 群

Basic chord table: 1-1, major triad (closed string), 1-2, minor triad (open string), 2, diminished 7th (membrane), 3, diatonic chord (membrane), 4, augmented Triads (membrane), 5. Chromatic chords (membrane)

Chord spectrum formula: $n \cdot f, f/n, H^n \cdot f, f/H^n$ ($H=1.059463, n \in \mathbb{Z}$)

Symbols: ◆=+ note, ●=- note, note color = color charge

Spectral coordinates: MOD12 group

关键词：时空，音乐，绘画，生命，经络，量子化，膜-弦

Keywords: spacetime, music, painting, life, meridians, quantization, membrane-string

Chord Spacetime; 和弦时空

人的时空经验中包含了两种解决结构：和弦-调性时空与非和弦-无调性时空。

和弦-调性时空：以和弦/量子化频谱为时空编码结构，映射至时空语义场，生成和弦/量子化时空。其典型经验形式包括：调性音乐（时间域）与色彩绘画（空间域）。在此模式下，时空表现为一个相干的和弦场，向三和弦解决。

非和弦-无调性时空：屏蔽了时空的和弦/量子化频谱结构，仅保留几何（图-底）与运动的纯粹关系性描述，借助外部参考系统（如时钟、标尺、参照物）获得定量。其典型经验形式包括：经典物理现象，及素描艺术与噪音音乐。在此模式下，时空退化为一个几何-坐标的关系框架，向无彩色-噪音解决。

Human spatiotemporal experience contains two resolution structures: chord-tonal spatiotemporal and non-chord-atonal spatiotemporal.

Chord-Tonality Spacetime: Using chord/quantized spectra as spacetime encoding structures, mapped to a spacetime semantic field, generating chord/quantized spacetime. Its typical experiential forms include: tonal music (time domain) and color painting (spatial domain). In this mode, spacetime is expressed as a coherent chord field, resolving towards triads.

Non-chordal-atonal spacetime: This mode shields the chord/quantized spectral structure of spacetime, retaining only a purely relational description of geometry (figure-ground) and motion, and obtaining quantification through external reference systems (such as clocks, rulers, and reference objects). Typical empirical forms include classical physical phenomena, as well as sketch art and noisy music. In this mode, spacetime degenerates into a geometric-coordinate relational framework, resolving towards achromatic-noise.

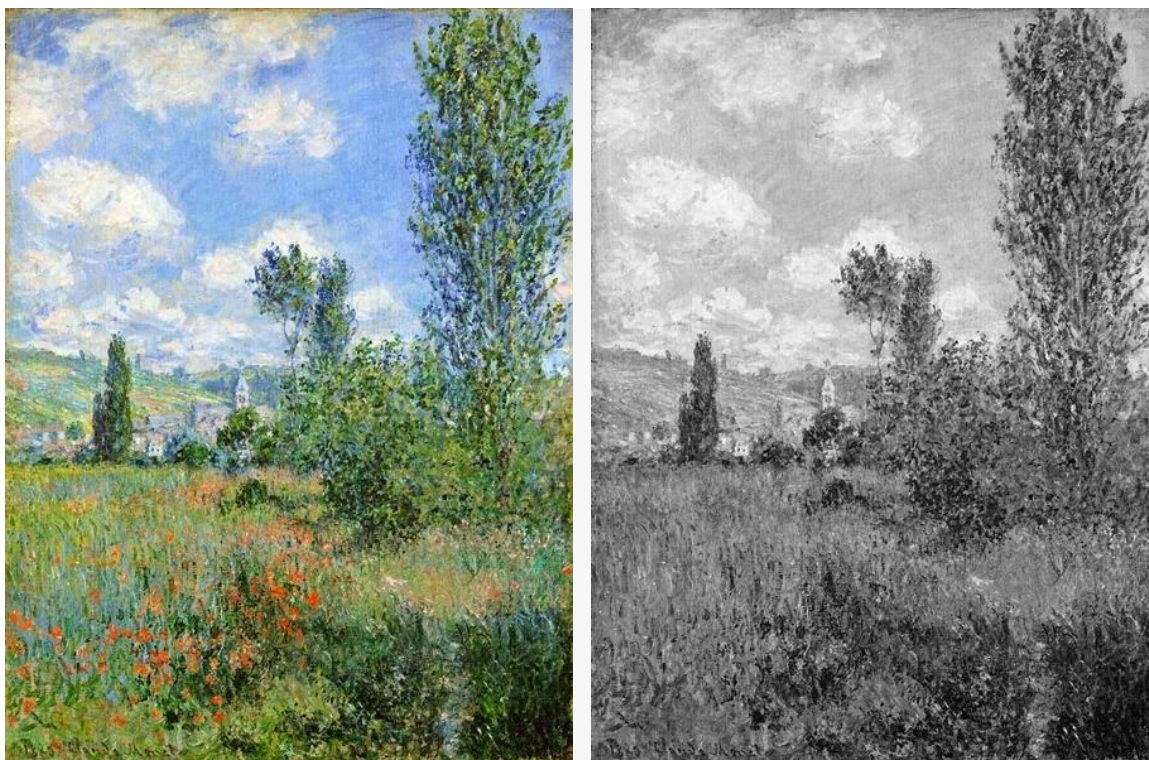


图 14.和弦-调性空间与非和弦-无调性空间

Figure 14. Chord-tonal space and non-chord-atonal space

量子化与和弦化：和弦频率与量子能量在本质上具有同构性，二者均基于一个基准频率 f ，通过整数 n 的调控生成离散的频率谱或能量谱：

和弦频谱通式： $f_n = n \cdot f$ ，其中 $n \in \mathbb{Z}$ ， f 为基频。

量子化假设形式： $E_n = n \cdot f \cdot h$ ，其中， n 同样为整数。

从数学结构上看，二者均表现为 $n \cdot f$ 的线性离散序列，区别仅在于物理维度的转换（频率→能量）。这种整数 n 调控的离散性是构成和谐音程与基础和弦的数学根源。

例如，取 n 为连续整数可构造常见和弦的音高结构：

$n = 1, 2, 3, 4, 5, 6 \rightarrow$ 对应频率比 $4:5:6 \rightarrow$ 大三和弦

$n = 1, 2, 3, 4, 5, 6, 7 \rightarrow$ 频率比 $4:5:6:7 \rightarrow$ 大七和弦

$n = 1, 2, 3, 4, 5, 6, 7, 8, 9 \rightarrow$ 频率比 $4:5:6:7:9 \rightarrow$ 大九和弦

$n = 1$ 至 11 的选择 \rightarrow 频率比 $4:5:6:7:9:11 \rightarrow$ 大十一和弦

若以整数比 $n:m$ 表示频率间的和谐关系，上述和弦可统一表达为：

大三和弦： $4:5:6$

大七和弦： $4:5:6:7$

大九和弦： $4:5:6:7:9$

大十一和弦：4 : 5 : 6 : 7 : 9 : 11

由此可见，整数序列生成的离散频率结构同时支撑了量子能级与和弦构成。在此视角下，量子化可视为物理世界的“频谱和弦化”，而和弦化亦可视为音乐领域的“频率量子化”。二者共同揭示了一种基于整数生成与离散对称的普遍结构原理。

Quantization and Chordification: Chord frequencies and quantum energy are essentially isomorphic, both based on a fundamental frequency f , and generated as discrete frequency or energy spectra through the modulation of integer n :

General formula for chord spectrum: $f_n = n \cdot f$, where $n \in \mathbb{Z}$ and f is the fundamental frequency.

Quantization hypothesis form: $E_n = n \cdot f \cdot h$, where n is also an integer.

Mathematically, both represent linear discrete sequences of $n \cdot f$, differing only in the transformation of the physical dimension (frequency \rightarrow energy). This discreteness, modulated by integer n , is the mathematical root of harmonious intervals and fundamental chords.

For example, taking n as consecutive integers allows us to construct the pitch structures of common chords:

$n = 1, 2, 3, 4, 5, 6 \rightarrow$ Corresponding frequency ratio 4:5:6 \rightarrow Major triad

$n = 1, 2, 3, 4, 5, 6, 7 \rightarrow$ Frequency ratio 4:5:6:7 \rightarrow Major seventh chord

$n = 1, 2, 3, 4, 5, 6, 7, 8, 9 \rightarrow$ Frequency ratio 4:5:6:7:9 \rightarrow Major ninth chord

$n = \text{choices from 1 to 11} \rightarrow$ Frequency ratio 4:5:6:7:9:11 \rightarrow Major eleventh chord

If we use the integer ratio $n:m$ to represent the harmonious relationship between frequencies, the above chords can be uniformly expressed as:

Major triad: 4 : 5 : 6

Major seventh chord: 4 : 5 : 6 : 7

Major ninth chord: 4 : 5 : 6 : 7 : 9

Major 11th chord: 4 : 5 : 6 : 7 : 9 : 11

Thus, it can be seen that the discrete frequency structure generated by integer sequences simultaneously supports both quantum energy levels and chord formation. From this perspective, quantization can be seen as the "spectral chordification" of the physical world, while chordification can be seen as the "frequency quantization" of the music field. Together, they reveal a universal structural principle based on integer generation and discrete symmetry.

泛音频谱 $n \cdot f$ 的倒数形式为： f/n ，用于构成光和弦，生成空间/几何结构

取基频 f ，构建倒数泛音列 $f, f/2, f/3, f/4, f/5, f/6, f/7, f/8, f/9, f/11, \dots$

选择子集并取倒数比得到和弦频率比（低→高）：

4:5:6 → 大三和弦

4:5:6:7 → 大七和弦

4:5:6:7:9 → 大九和弦

4:5:6:7:9:11 → 大十一和弦

该结构对应频域有理点阵，可映射为空间几何（膜-弦结构）。

泛音列对偶与量子假设

正向泛音列 $n \cdot f$ 与倒数泛音列 f/n 互为倒数对偶。

引入量子 h ：

$$E = n \cdot f \cdot h \leftrightarrow E = (f/n) \cdot h$$

满足对偶关系 $E_n \cdot \tilde{E}_n = (fh)^2$ 。

泛音频谱的倒数形式 f/n 是构建光和弦、生成空间几何结构的自然语言；它与正形式 $n \cdot f$ 共同构成量子假设的完整对偶： $E = n \cdot f \cdot h \leftrightarrow E = (f/n) \cdot h$ ，从而将声学、空间驻波、光学干涉与量子化统一于同一数学框架。

The reciprocal form of the overtone spectrum $n \cdot f$ is f/n , used to construct "light chords" and generate spatial/geometric structures.

Taking the fundamental frequency f , we construct the reciprocal overtone series: $f, f/2, f/3, f/4, f/5, f/6, f/7, f/8, f/9, f/11, \dots$

Selecting subsets and taking reciprocal ratios yields chord frequency ratios (low → high):

4:5:6 → Major triad

4:5:6:7 → Major seventh chord

4:5:6:7:9 → Major ninth chord

4:5:6:7:9:11 → Major eleventh chord

This structure corresponds to a rational point lattice in the frequency domain, which can be mapped onto spatial geometry (Membrane-string structure).

Overtone Duality and Quantum Hypothesis

The forward overtone series $n \cdot f$ and the reciprocal overtone series f/n are reciprocal duals of each other.

Introducing the quantum h :

$$E = n \cdot f \cdot h \leftrightarrow E = (f/n) \cdot h$$

This satisfies the duality relation $E_n \cdot \tilde{E}_n = (fh)^2$.

The reciprocal form f/n of the overtone spectrum is the natural language for constructing light chords and

generating spatial geometric structures; together with the positive form $n \cdot f$, it constitutes the complete duality of the quantum hypothesis: $E = n \cdot f \cdot h \leftrightarrow E = (f/n) \cdot h$, thereby unifying acoustic chords, spatial standing waves, optical interference, and quantization within a single mathematical framework.

时空二相性：声和弦与光和弦分别表达和弦时间（音乐）与和弦空间（绘画），两者镜像对称： $n \cdot f \leftrightarrow f/n$ （泛音频谱）； $H^n \cdot f \leftrightarrow f/H^n$ （ $H=1.059463$ ，平均律），可数学转换；空间具有定域性，时间具有非定域性，共同表现为时-空（非定域-定域）二相性，类似波粒二象性，这是和弦时空的基本特征。

Spatiotemporal duality: Sound chords and light chords respectively express chord time (music) and chord space (painting), and the two are mirror-symmetric: $n \cdot f \leftrightarrow f/n$ (overtone spectrum); $H^n \cdot f \leftrightarrow f/H^n$ ($H=1.059463$, equal temperament), which can be mathematically converted; space is local and time is non-local, which together manifests as spatiotemporal (non-local-local) duality, similar to wave-particle duality. This is the basic characteristic of chord spatiotemporal.

Chord Geometry; 和弦几何

和弦几何涉及两个基本概念：“和弦”与“弦”。

和弦：由三个以上音符构成的和弦/量子化频谱编码结构。

弦：和弦编码映射的几何语义：弦-膜，线，面等。

关系：和弦是弦的编码形式，弦是和弦的几何语义。分别从频谱结构与几何语义（弦-膜，点，线，面）的角度进行描述。

Chord geometry involves two fundamental concepts: "chord" and "string".

Chord: A chord/quantized spectral encoding structure consisting of three or more notes.

String: The geometric semantics of a chord's encoded mapping: string-membrane, line, surface, etc.

Relationship: Chords are the encoded form of strings, and strings are the geometric semantics of chords. They are described separately from the perspectives of spectral structure and geometric semantics (string-membrane, point, line, surface).

不同的光和弦（量子化色谱）映射到不同的几何结构，产生和弦/量子化几何，并生成图-底，分面等空间结构——几何量子化是时空量子化的必要条件。

和弦编码的几何语义：光和弦编码包含几何语义，并决定空间结构：

音符（Note）：对应单频 $(x) \bmod 12$ ，构成点空间。

开弦（Open String）：对应小三和弦 $(-7, -3, 0) \bmod 12$ ，构成开放/分面线；

闭弦 (Closed String): 对应大三和弦 $(-7, -4, 0) \bmod 12$, 构成轮廓线;

膜 (Membrane): 对应对称和弦 (Symmetrical Chords), 如减七 $(0, 3, 6, 9)$ 、全音阶 $(0, 2, 4, 6, 8, 10)$ 、增三 $(0, 4, 8)$, 半音阶和弦 $(0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11) \bmod 12$, 构成非线性空间的连续面。

和弦几何框架: 三和弦 (开弦, 闭弦) 定义了对称和弦 (膜) 的边界: 大三和弦 (闭弦) 生成轮廓线, 产生闭合面; 小三和弦生成开放/分面线, 大-小三和弦共同构成“体”, 和弦空间由此生成; 所有和弦可以分解为音符: 点。

当和弦频谱被观察者屏蔽, 和弦几何转换为非和弦-无调性的几何元素: 点, 线, 面, 体。

绘画是几何应用, 和弦几何 (空间) 以色彩绘画为观察基础, 以第一人称视角的视觉实验为研究方法, 以实验图例作为实验报告。

Different chords of light (quantized spectra) map to different geometric structures, generating chord/quantized geometry and producing spatial structures such as figure-ground and facets—geometric quantization is a necessary condition for spacetime quantization.

Geometric semantics of chord encoding: Light chord encoding contains geometric semantics and determines spatial structure:

Note: Corresponds to a single frequency $(x) \bmod 12$, forming point space.

Open String: Corresponds to a minor triad $(-7, -3, 0) \bmod 12$, forming open/facet lines;

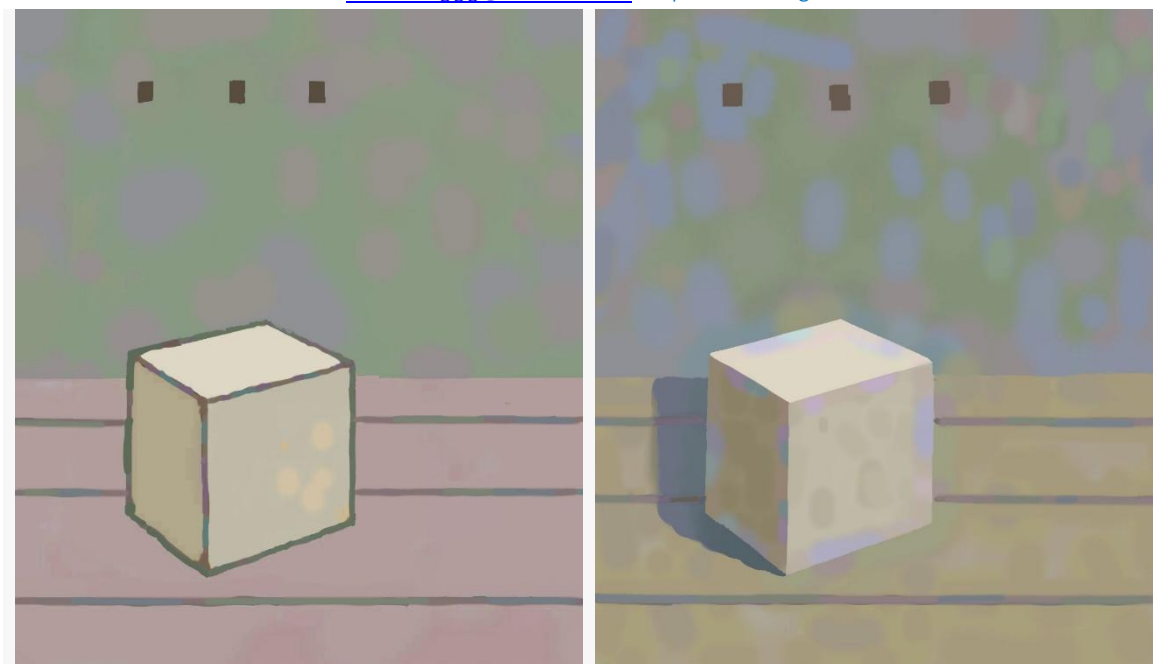
Closed String: Corresponds to a major triad $(-7, -4, 0) \bmod 12$, forming contour lines;

Membrane: Corresponds to symmetrical chords, such as diminished seventh $(0, 3, 6, 9)$, whole tone scale $(0, 2, 4, 6, 8, 10)$, augmented triad $(0, 4, 8)$, and chromatic scale chord $(0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11) \bmod 12$, forming continuous surfaces in nonlinear space.

Chord geometric framework: Triads (open strings, closed strings) define the boundaries of symmetrical chords (membranes): Major triads (closed strings) generate contour lines, producing closed surfaces; minor triads generate open/facet lines; major and minor triads together form a 'solid,' generating chord space; all chords can be decomposed into notes: points.

When the chord spectrum is masked from the observer, chord geometry transforms into non-chordal, atonal geometric elements: points, lines, surfaces, solids.

Painting is the application of geometry; chord geometry (space) is based on observing color painting, using first-person visual experiments as the research method, and using experimental illustrations as experimental reports.



图：3.1：和弦几何语义：点，线，面，体

Figure 3.1: Geometric Semantics of Chords: Point, Line, Surface, Volume

https://www.researchgate.net/publication/340492620_Chord_Painting den

Li, X. H. (2024). Chord Language. Zenodo.

<https://zenodo.org/records/11817631>

Chord Biology；和弦生命

对生命的认识来自两种观察者：和弦-调性（第一人称视角）观察者和非和弦-无调性（第三人称视角）观察者，分别观察到两种生命形式：和弦包（量子化频谱，场）与生物体（细胞，分子等），两者代表不同、互补的观察者视角。

Our understanding of life comes from two types of observers: chord-tonality (first-person perspective) observers and non-chord-atonality (third-person perspective) observers, who observe two life forms respectively: chord packets (quantized spectrum, field) and organisms (cells, molecules, etc.). These two represent different and complementary observer perspectives.

在人体中，和弦表现为经络（或脉轮）系统。观察表明，十二经络具有受激频谱响应，其频率分布为十二平均律：

$$fn = H^n \cdot f_0, \text{ 其中 } H = 2^{(1/12)} \approx 1.059463, n \in \mathbb{Z}$$

该式可切换为泛音频谱 ($n \cdot f$)。

这表明：音乐（时间域）、绘画（空间域）、经络（生命域）及量子化假设（ $n.f.h$ ）共享统一的离散数学框

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架。

In the human body, chords manifest as the system of meridians (or chakras). Observations indicate that the twelve primary meridians exhibit stimulated spectral responses, with a frequency distribution following the

Twelve-Tone Equal Temperament:

$$f_n = H^n \cdot f_0, \text{ where } H = 2^{1/12} \approx 1.059463, n \in \mathbb{Z}$$

This formula can be transitioned into an overtone spectrum $(n \cdot f)$.

These findings suggest that **music** (the temporal domain), **painting** (the spatial domain), **meridians** (the biological/life domain), and the **quantization hypothesis** $(n \cdot f \cdot h)$ all share a unified discrete mathematical framework.

Natural Spirit; 自然精神

人类有两套语言系统：符号语言与和弦语言。

前者是基于命名与指称的人工信息系统，如：自然语言；命名符号与命名对象产生心-物差异。

后者是基于和弦/量子化频谱的自然信息系统，主-客具有相同的形式 $(n \cdot f, f/n)$ ，心物一体。如：音乐、绘画，经络等——和弦是自然精神的形式。

人类的知识来自两种观察者：和弦-调性观察者与非和弦-无调性观察者。两种语言与两种观察者相关。

精神是符号与和弦，无调性与调性二层存有。

Humans possess two language systems: symbolic language and chordal language.

The former is an artificial information system based on naming and reference, such as natural language; the naming symbols and the named objects create a mind-matter difference.

The latter is a natural information system based on chords/quantized spectrums, where subject and object share the same form $(n \cdot f, f/n)$, and mind and matter are unified. Examples include music, painting, and meridians—chords are forms of natural spirit.

Human knowledge comes from two types of observers: chord-tonal observers and non-chord-atonal observers. The two languages are related to these two types of observers.

Spirit exists on two levels: symbols and chords, atonality and tonality.

和弦语言基于音乐，和弦绘画与和弦生命（经络）的观察，含第一与第三人称视角。其中，和弦绘画呈现和弦的空间/几何结构，而和弦时间（音乐）作为其对称镜像 $(n \cdot f, f/n, 1.059463^n \cdot f, f/1.059463^n)$ ，二者共同构

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成和弦的时-空结构。主要出版物包括：《和弦语言》——系统阐述和弦的编码体系、语义规则及其数学结构；

《和弦绘画》——收录和弦绘画（和弦空间）的视觉实验图集。

本书核心内容曾先后在第 24 届世界哲学大会（2018 年 8 月，北京大学）与第 25 届世界哲学大会（2025 年 8 月，罗马大学）上宣读。

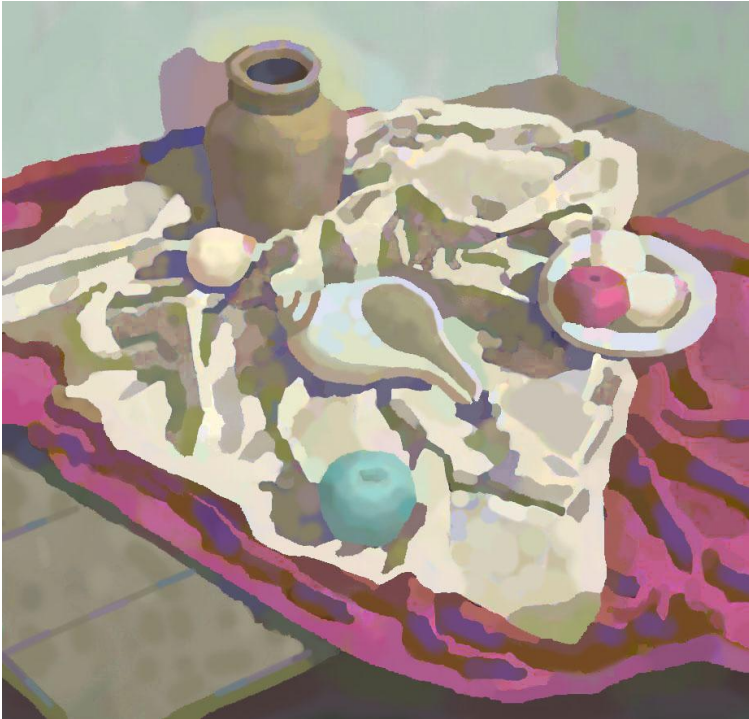
Chord Language is based on observations of music, chord paintings and chord life (meridians), encompassing both first-person and third-person perspectives. Chord paintings present the spatial/geometric structure of chords, while chord time (music) serves as its symmetrical mirror image ($n \cdot f$, f/n , $1.059463^{n \cdot f}$, $f/1.059463^n$), together constituting the spatiotemporal structure of chords. Major publications include: *Chord Language*—a systematic exposition of the chord encoding system, semantic rules, and mathematical structure; and *Chord Painting*—a collection of visual experimental diagrams of chord paintings (chord space).

The core content of this book was previously presented at the 24th World Congress of Philosophy (August 2018, Peking University) and the 25th World Congress of Philosophy (August 2024, Roma Tre University).

Directory; 目录

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Chord Geometry; 和弦几何	错误!未定义书签。
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1. Heptachord; 七声音阶



Still life, Heptachord C major, f sharp minor; 静物、七声音阶，C 大调、升 f 小调



Still life, Heptachord A major, f sharp minor; 静物、七声音阶，C 大调、升 f 小调



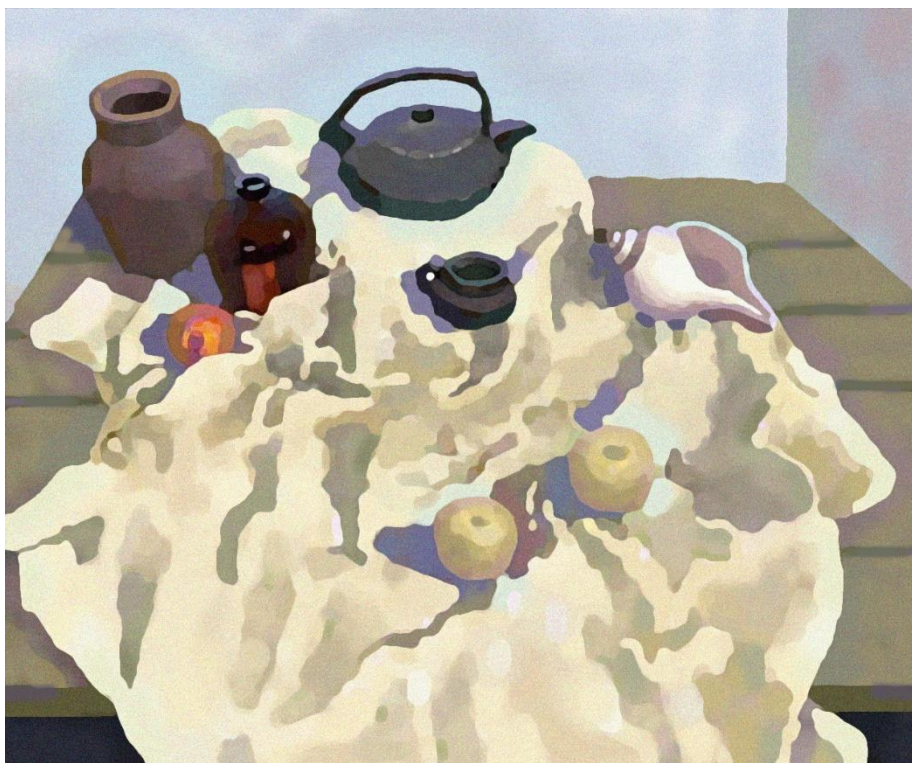
Still life, Heptachord C major, f sharp minor; 静物、七声音阶，C 大调、升 f 小调



Still life, Heptachord C major, f sharp minor; 静物、七声音阶，C 大调、升 f 小调



Still life, Heptachord C major, f sharp minor; 静物、七声音阶，C 大调、升 f 小调



Still life, Heptachord C major, f sharp minor; 静物、七声音阶，C 大调、升 f 小调



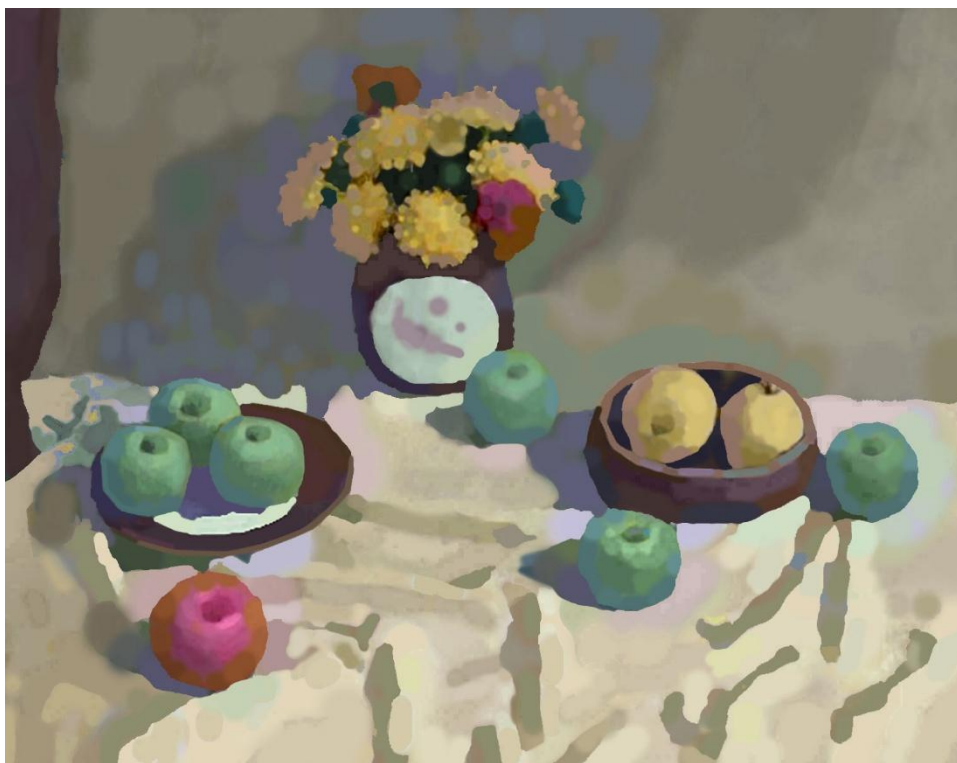
Still life, Heptachord A-flat major, d minor; 静物、七声音阶，降A大调、d小调



Still life, Heptachord C major, f sharp minor; 静物、七声音阶，C大调、升f小调



Still life, Heptachord C major, f sharp minor; 静物、七声音阶，C 大调、升 f 小调



Still life, Heptachord A major, f sharp minor; 静物、七声音阶，A 大调、升 f 小调



Still life, Heptachord C major, f sharp minor; 静物、七声音阶，C 大调、升 f 小调



Still life, heptachord, C major, F-sharp minor; 静物、七声音阶，C 大调、升 f 小调



Still life, heptachord, C major, F-sharp minor; 静物、七声音阶，C 大调、升 f 小调



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Still life, heptachord, C major, F-sharp minor; 静物、七声音阶，C 大调、升 f 小调



Still life, Heptachord C major, f sharp minor; 静物、七声音阶，C 大调、升 f 小调



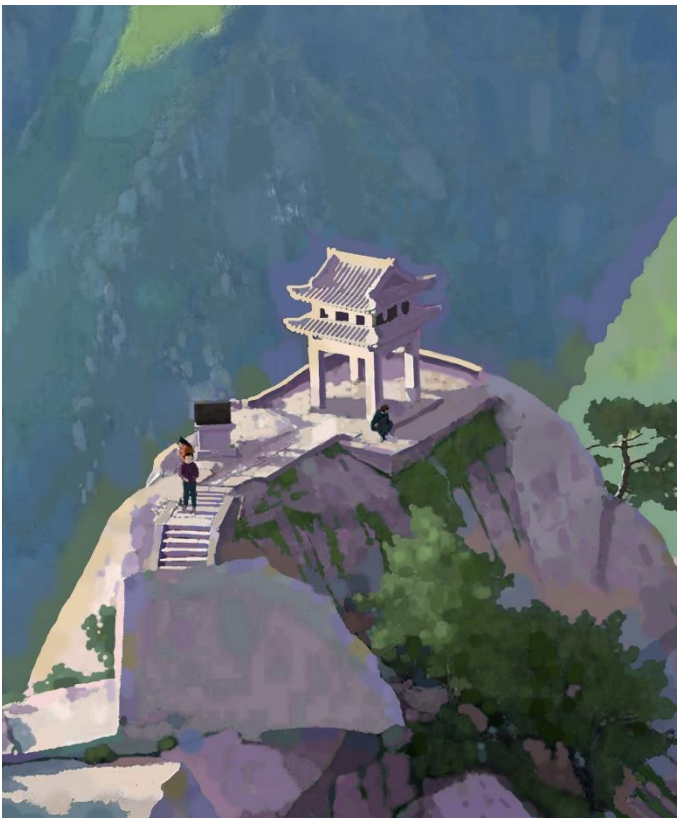
Forbidden City, Heptachord A flat major, b minor; 故宫，七声音阶，降 A 大调、b 小调

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Huashan, heptachord F major, d minor; 华山，七声音阶 F 大调、d 小调



Huashan, heptachord F major, d minor; 华山，七声音阶 F 大调、d 小调



Heptachord F major, d minor; 七声音阶 F 大调、d 小调



Mount Emei, Heptachord A flat major, d minor; 峨眉山, 七声音阶降 A 大调、d 小调



Heptachord A flat major, d minor; 七声音阶，降A大调、d小调



Heptachord A flat major, d minor; 七声音阶，降A大调、d小调



Heptachord A flat major, d minor; 七声音阶，降A大调、d小调



Heptachord A flat major, b minor; 七声音阶，降A大调、b小调



Portrait, Heptachord A flat major, d minor; 肖像, 七声音阶, 降A大调、d小调



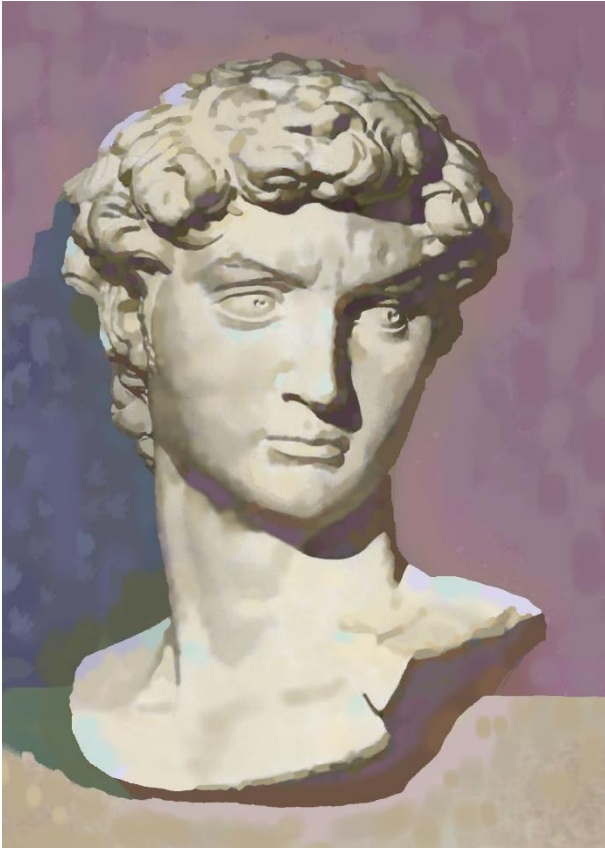
Portrait, heptachord A flat major, b minor; 肖像, 七声音阶, 降A大调、b小调



Self-portrait. heptachord A flat major, d minor; 自画像，七声音阶，降A大调、d小调



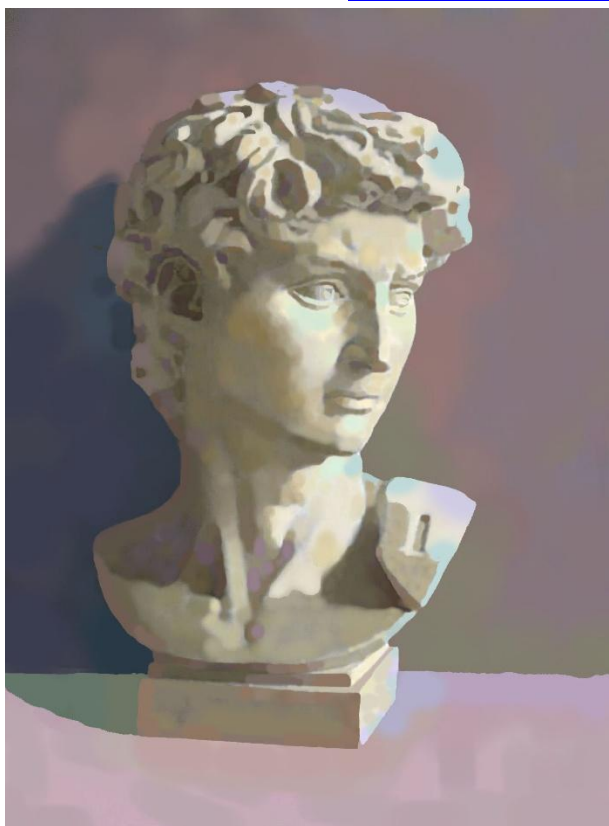
Self-portrait. heptachord A flat major, d minor; 自画像，七声音阶，降A大调、d小调



Heptachord C major, f sharp minor; 七声音阶，C 大调、升 f 小调



Heptachord b flat minor, E major; 七声音阶 降 b 小调、E 大调



Heptachord f sharp minor, C major; 七声音阶，升 f 小调、C 大调



Heptachord f flat minor, C major; 七声音阶，升 f 小调、C 大调



Heptachord f sharp minor, C major; 七声音阶，升 f 小调、C 大调



Heptachord f-sharp minor, C major; 七声音阶，升 f 小调、C 大调



Heptachord f sharp minor, C major | 七声音阶，升f小调、C大调



Heptachord f sharp minor, C major | 七声音阶，升f小调、C大调

2. Jazz Scale; 爵士音阶



Still life, Jazz Scale, C major, f# minor; 静物、爵士音阶，C 大调，f#小调



Still life, jazz scale, A major, E-flat minor; 静物、爵士音阶，A 大调，降 e 小调



Still life, Jazz Scale, C major, f# minor; 静物、爵士音阶，C 大调，f#小调



Still life, jazz scale, A major, E-flat minor; 静物、爵士音阶，A 大调，降 e 小调



Still life,Jazz Scale,C major,f# minor；静物、爵士音阶，C 大调，f#小调



Still life,Jazz Scale, f# 7Chord；静物、爵士音阶，f#11 和弦



Still life, Jazz Scale, C major, f# minor; 静物、爵士音阶, C 大调, f#小调



Still life, Jazz Scale, C# major, g minor; 静物、爵士音阶, C#大调, g 小调



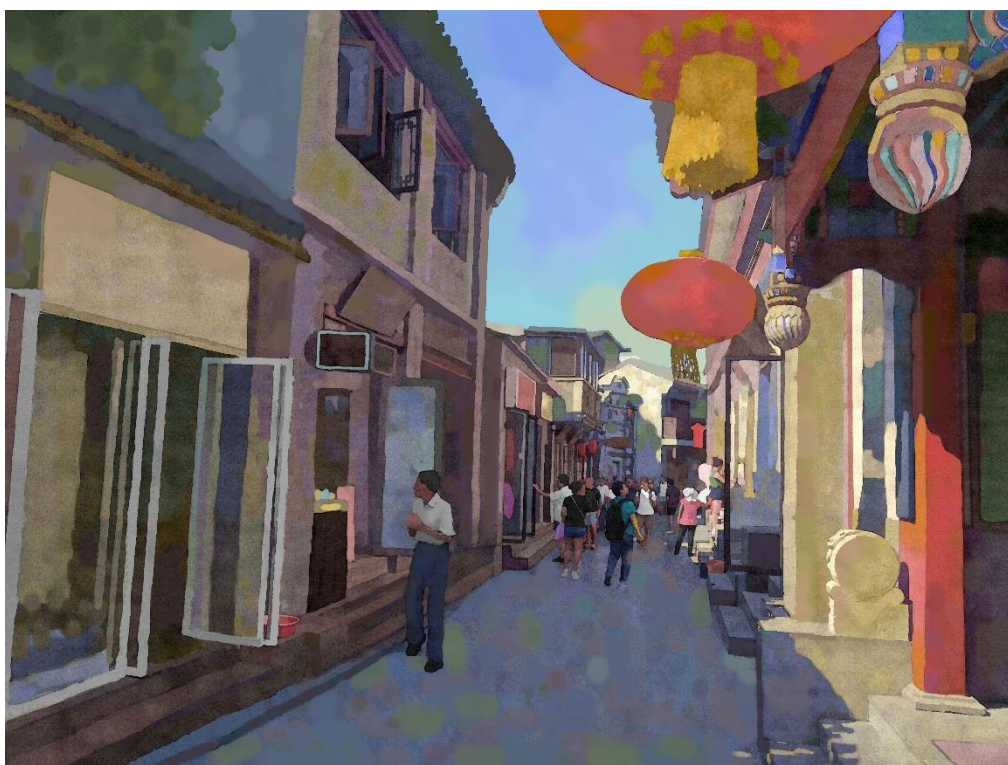
Still life, Jazz Scale, C major, f# minor; 静物、爵士音阶，C 大调，f#小调



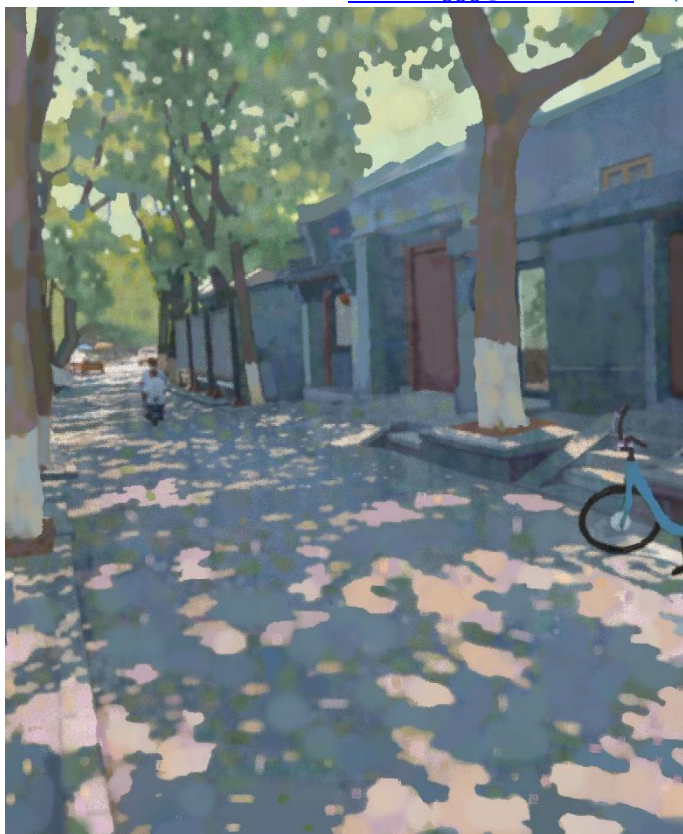
Still life, jazz C 9 chord; 静物，爵士 C 9 和弦



Sunflower, Jazz E Major；向日葵，爵士 E 大调



Beijing hutong, Jazz Scale C major；北京胡同、爵士音阶 C 大调



Beijing hutong, Jazz Scale C# major; 北京胡同、爵士音阶 C#大调



Beijing hutong, Jazz Scale C# major; 北京胡同、爵士音阶 C#大调



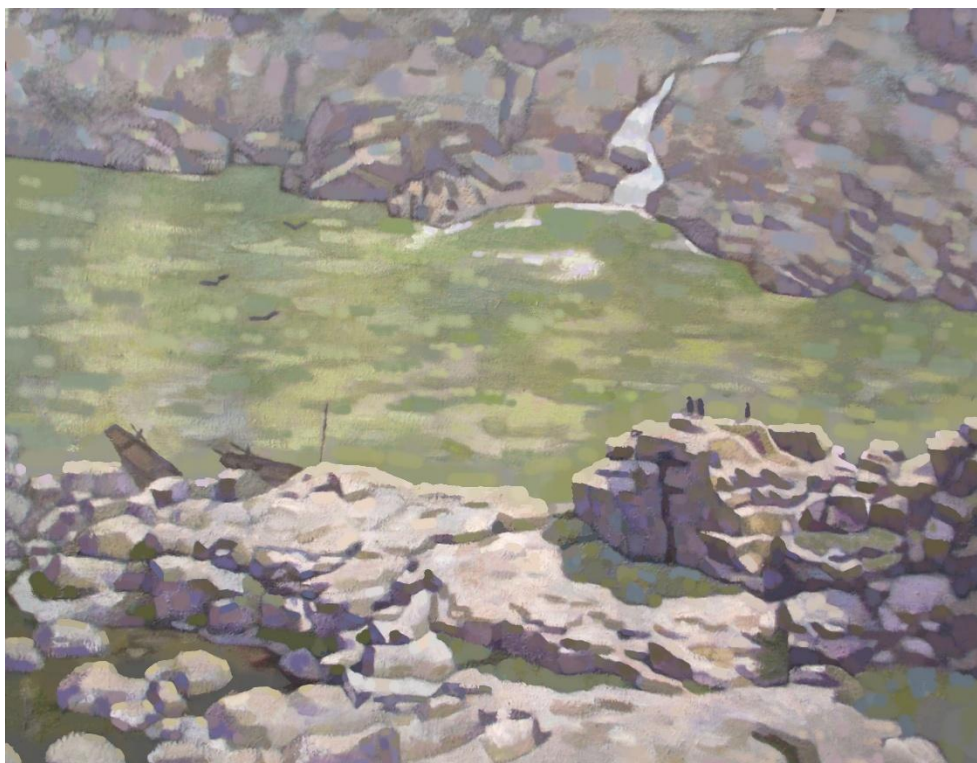
Cao Xueqin's Former Residence in Beijing, Jazz Scale A Major; 北京曹雪芹故居，爵士音阶 A 大调



Poplar forest, Jazz Scale A major; 白杨林、爵士音阶，A 大调



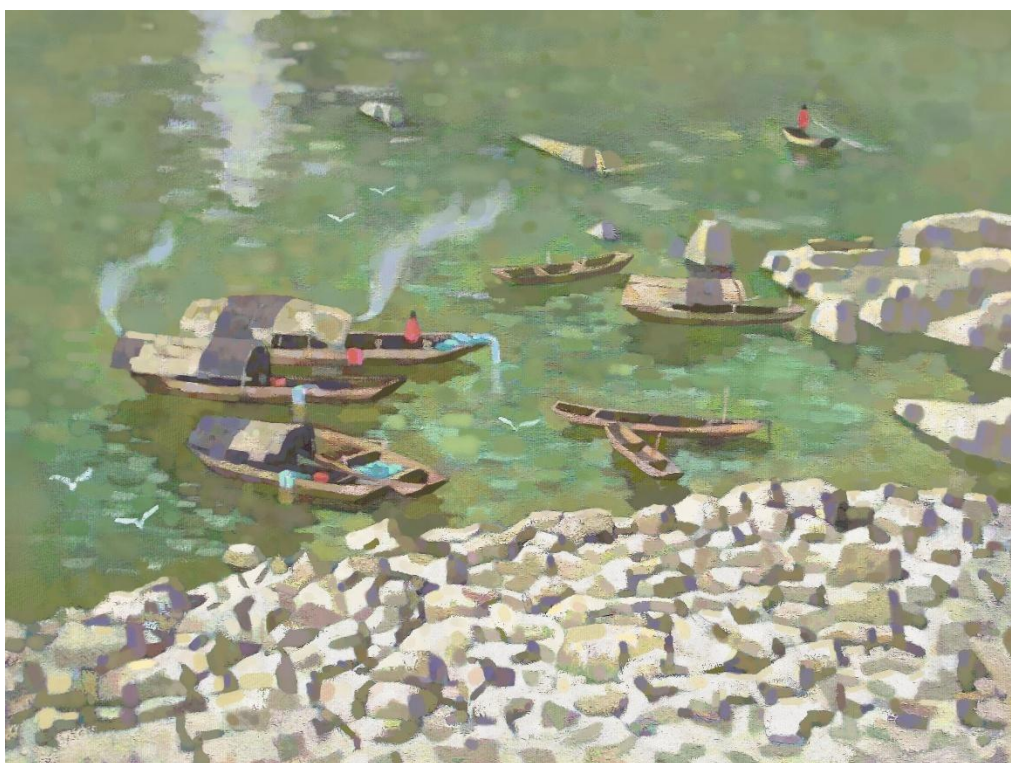
Poplar forest, Jazz Scale A major; 白杨林、爵士音阶，A 大调



Jinsha River Valley, Jazz Scale in g minor; 金沙江河谷，爵士音阶 g 小调



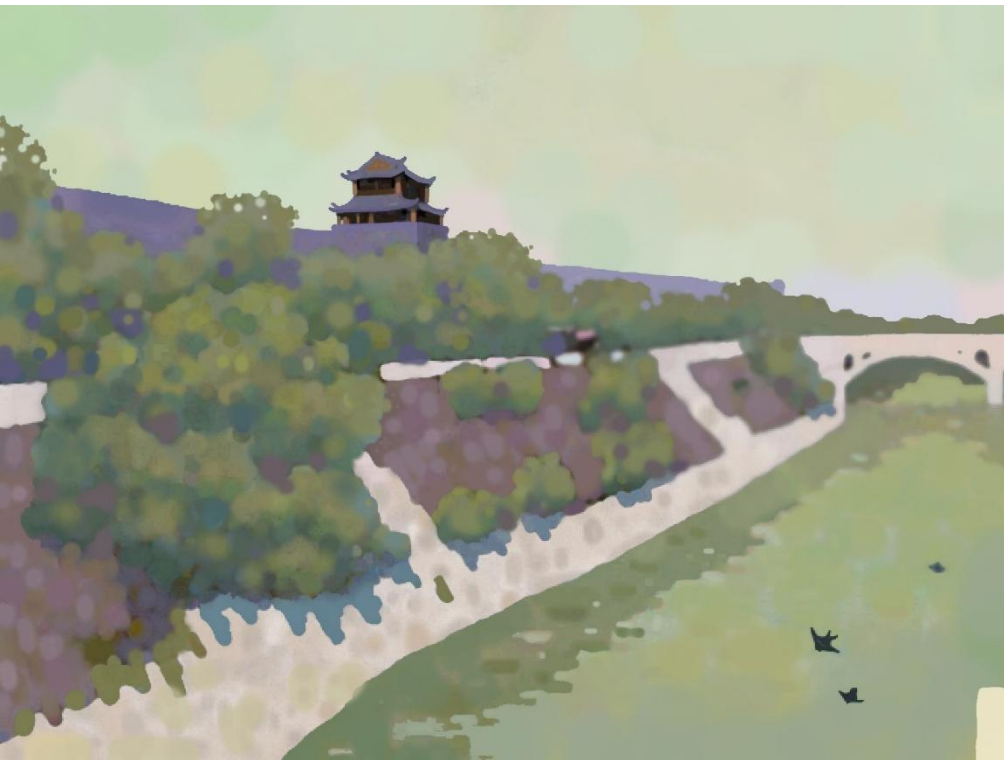
Fishing Boat, Jazz Scale in f# minor; 渔舟，爵士音阶，f#小调



Riverside, Jazz Scale A-flat major; 江边、爵士音阶，降A大调



Xi 'an City Wall, Jazz Scale,C# major; 西安城墙，爵士音阶，C#大调



Xi 'an City Wall, Jazz Scale,A major; 西安城墙，爵士音阶，A 大调



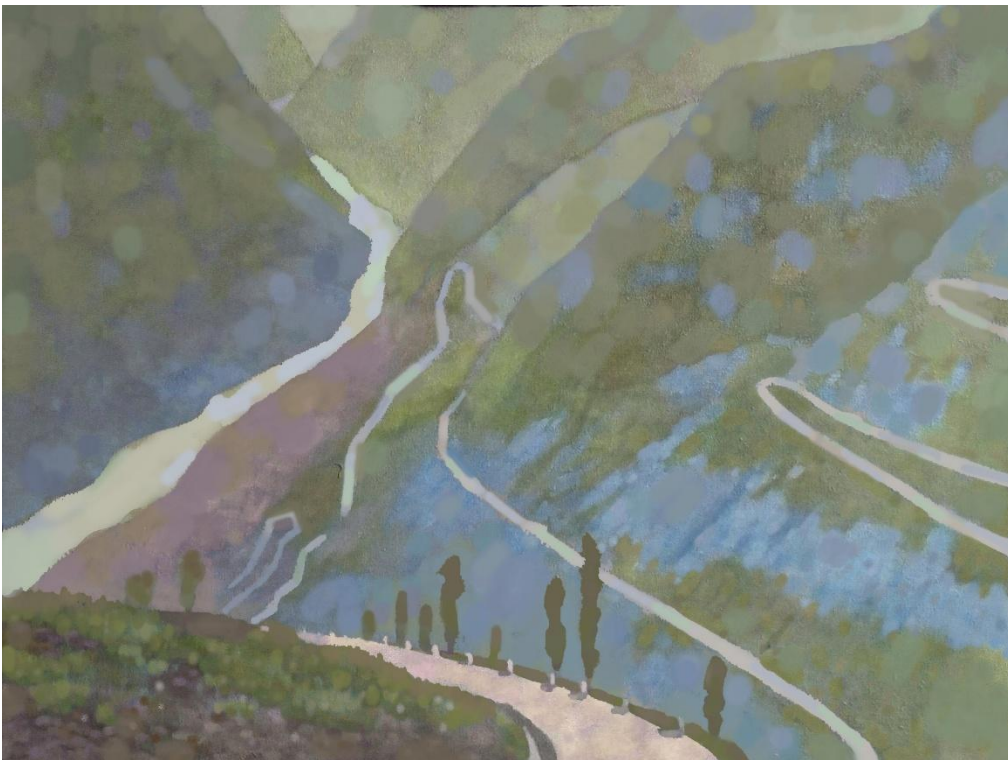
Unnamed Lake,,Jazz Scale,C major,f# minor；未名湖、爵士音阶 C 大调，f#小调



Lotus,Jazz Pentatonic Scale C major；荷，爵士音阶 C 大调



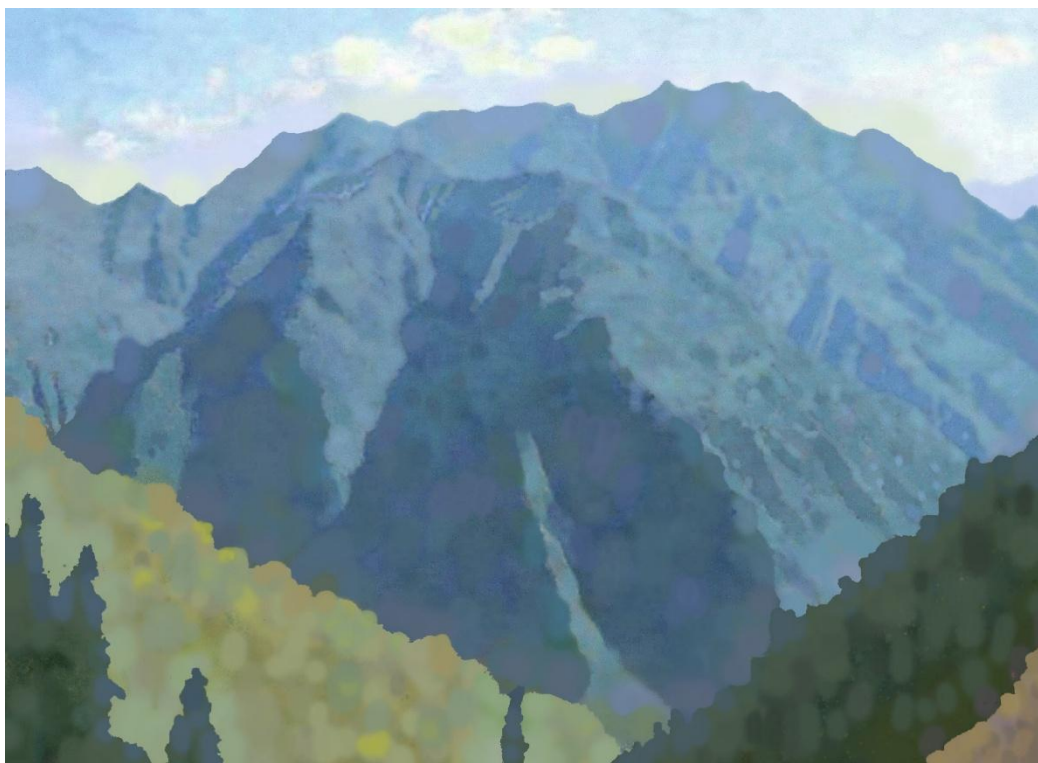
Dutch, Jazz Pentatonic Scale A major; 荷、爵士五声音阶 A 大调



Canyon, Jazz Pentatonic Scale C# major; 峡谷、爵士五声音阶 C#大调



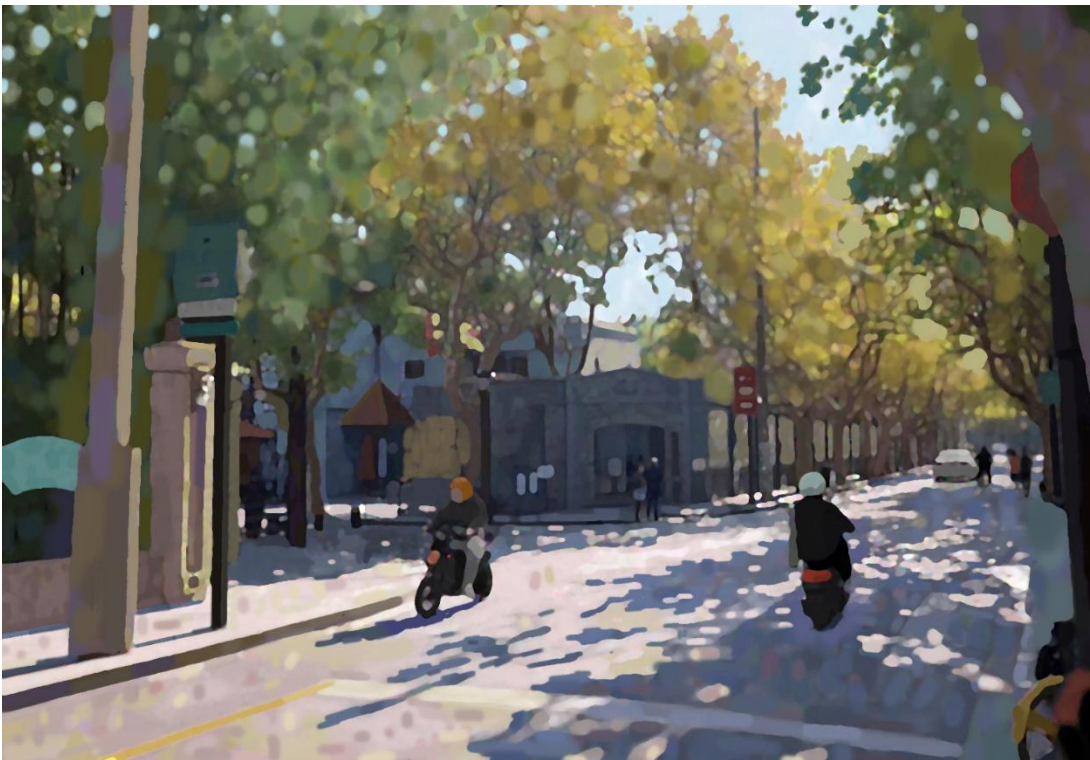
Ancient town, Jazz Scale b minor; 古镇、爵士音阶, b 小调



Mountain, Jazz scale C# major | 山、爵士音阶 C#大调



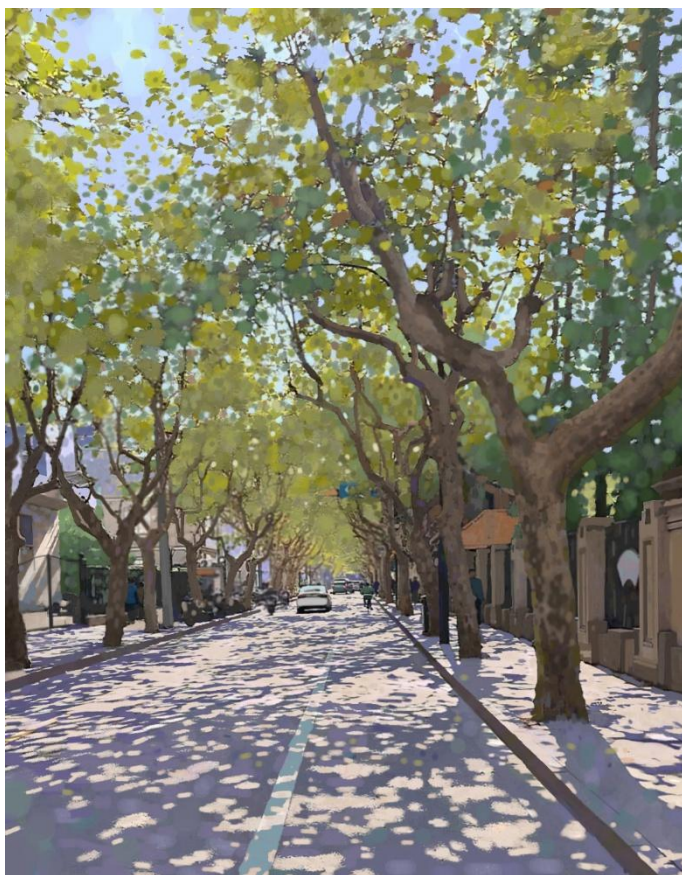
Sun Zhongshan Former Residence in Shanghai, Jazz Scale C Major; 上海孙中山故居，爵士音阶 C 大调



Sun Zhongshan Former Residence in Shanghai, Jazz Scale C Major; 上海孙中山故居，爵士音阶 C 大调



Xu Jiahui's morning, jazz scale C major; 徐家汇的早上, 爵士音阶 C 大调



Shanghai Sinan Road, Jazz Scale C# Major; 上海思南路, 爵士音阶 C#大调



Middle Huaihai Road, Shanghai, Jazz scale C major; 上海淮海中路，爵士音阶 C 大调



East Coast, jazz scale C major; 东海岸，爵士音阶 C 大调



Donghai Bridge, jazz scale C major; 东海大桥，爵士音阶 C 大调



Nanhui East Coast, jazz scale C# major; 南汇东海岸，爵士音阶 C#大调



Dianshan Lake, Jazz Scale C major；淀山湖，爵士音阶 C 大调



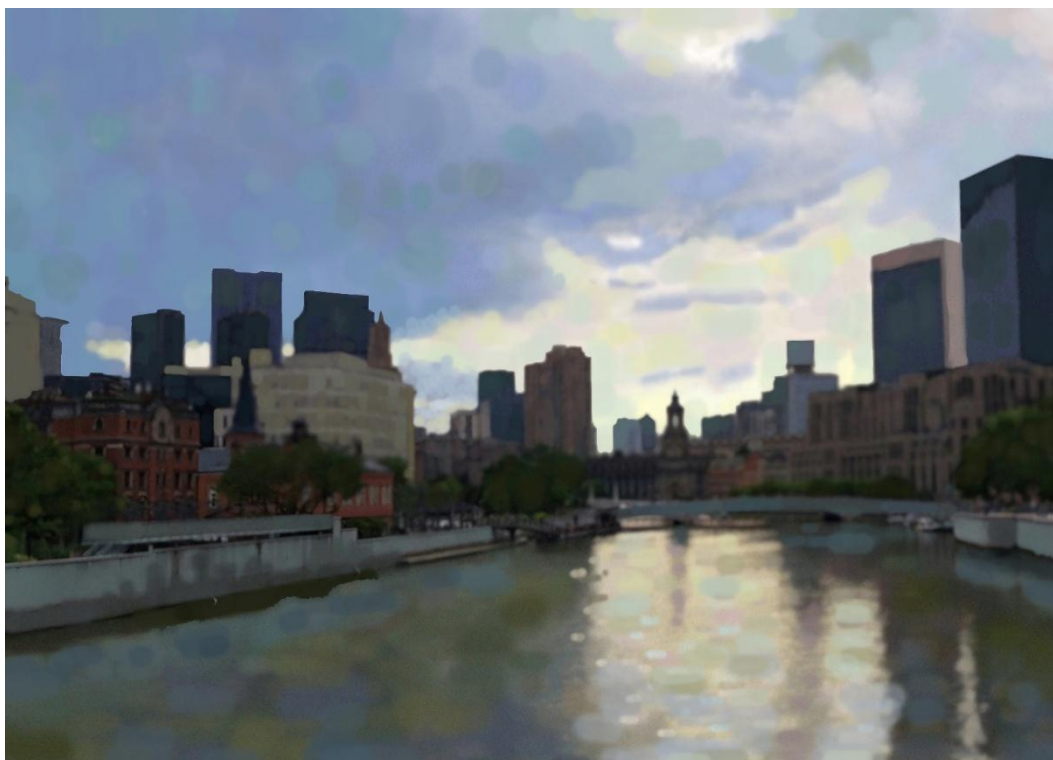
Huaihai Middle Road under the Sun, Jazz scale C# major；阳光下的淮海中路，爵士音阶 C#大调



Yueyang Road Chinese Academy of Sciences, Jazz scale C major; 岳阳路中科院，爵士音阶 C 大调



Shanghai Huangpi Road, Jazz scale C major; 上海黄陂路，爵士音阶 C 大调



Suzhou River, jazz scale C major; 苏州河，爵士音阶 C 大调



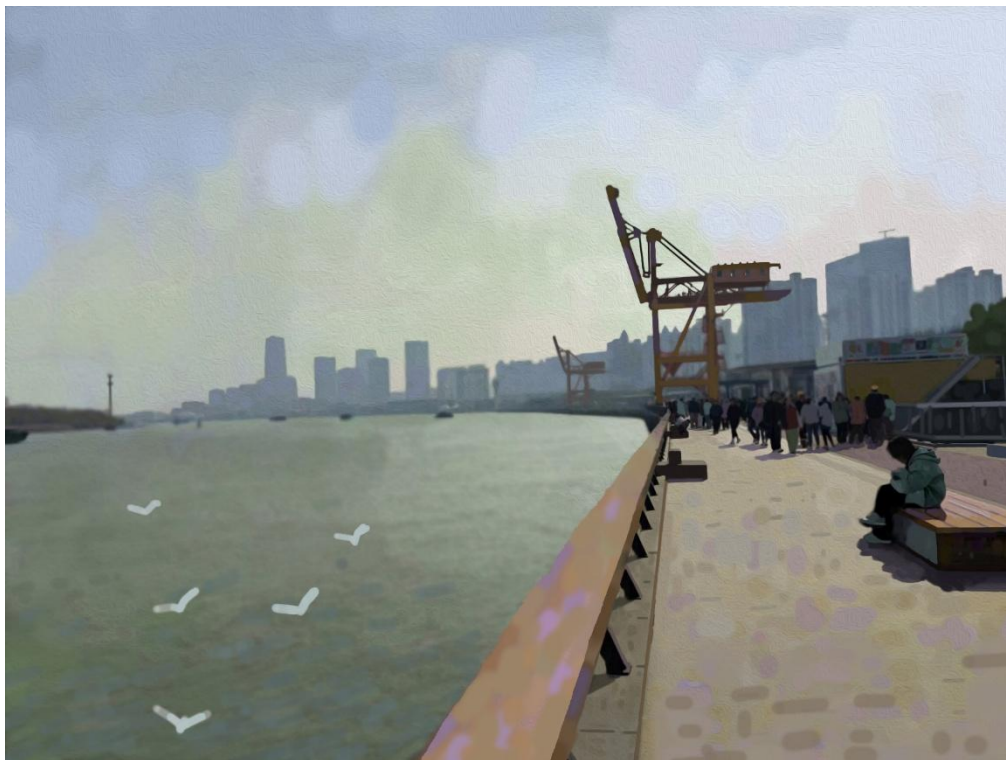
Morning in Xujiahui, jazz scale C major; 徐家汇的早晨，爵士音阶 C 大调



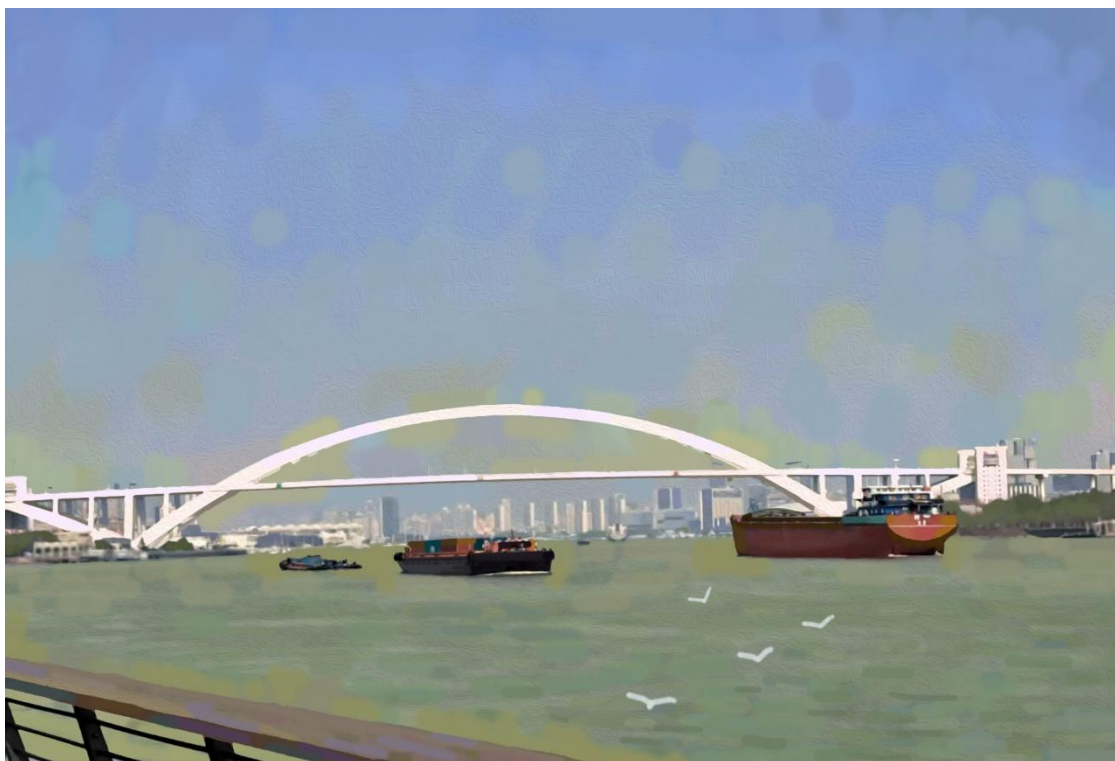
Xu Jiahui, Jazz scale C-sharp major；徐家汇，爵士音阶升 C 大调



Huangpu River, jazz scale C major；黄浦江，爵士音阶 C 大调



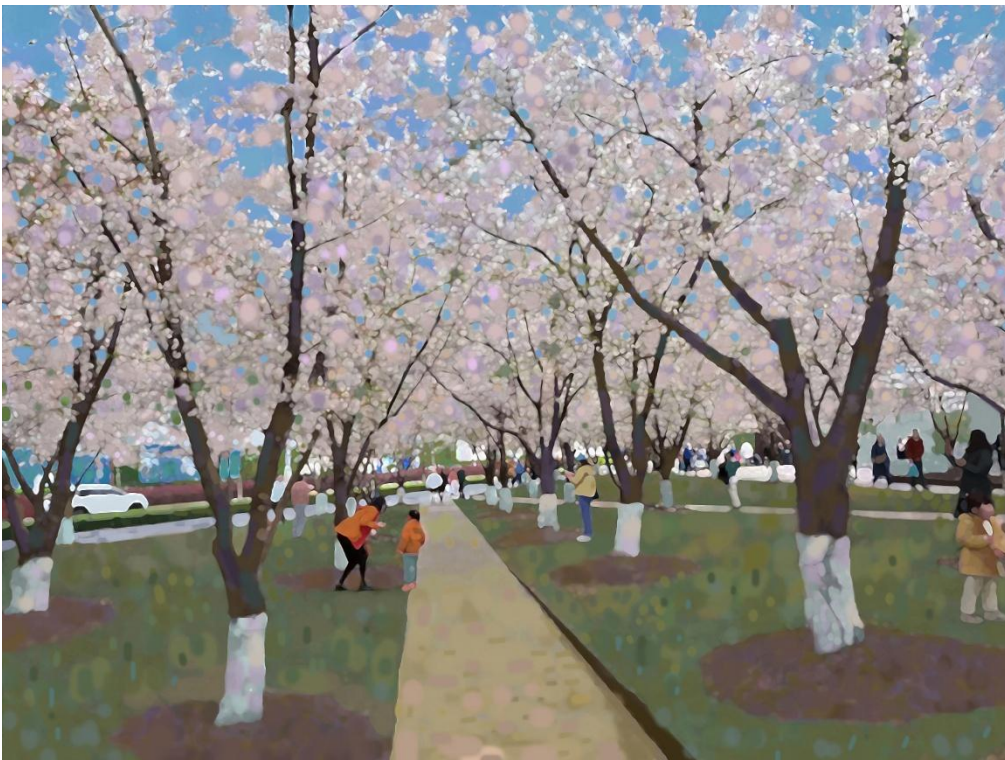
West Bund Art District, Jazz Scale C Major；西岸艺术区，爵士音阶 C 大调



Lupe Bridge, jazz scale C major；卢浦大桥，爵士音阶 C 大调



Xuhui Riverside, Jazz scale C major; 徐汇滨江，爵士音阶 C 大调



Cherry Blossom Forest, Jazz in C Major; 樱花林，爵士 C 大调



Cherry Blossom Forest, Jazz in C# Major; 樱花林，爵士 C#大调



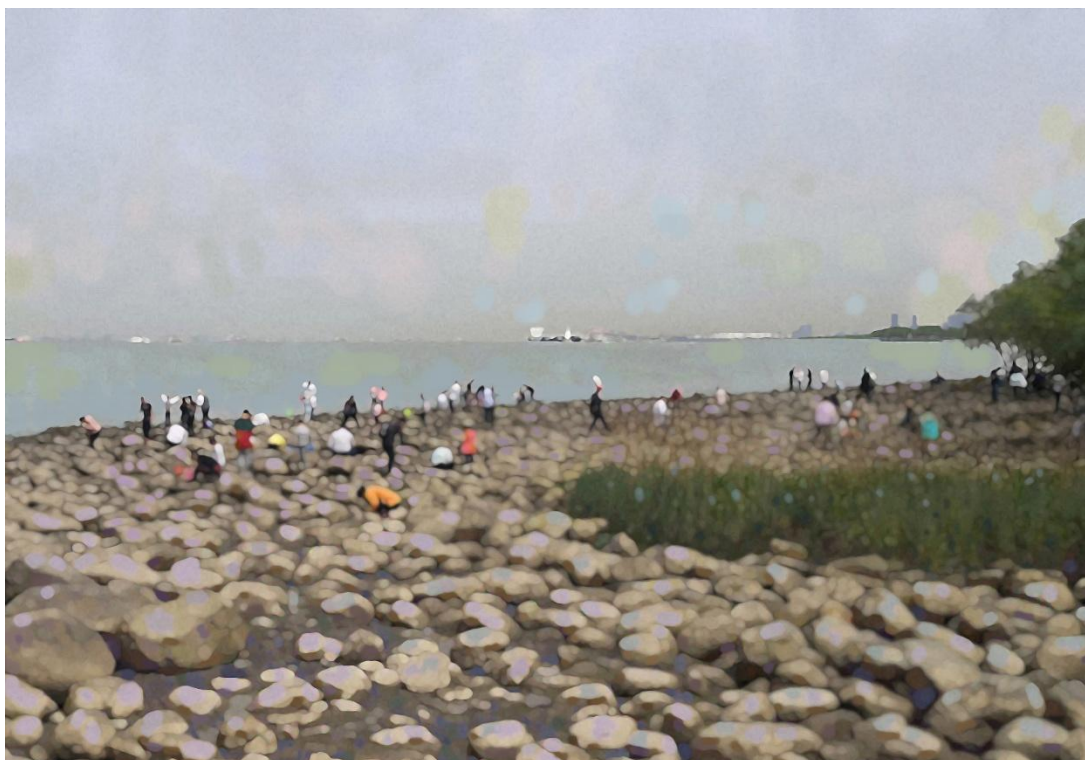
Xujiahui Park, Jazz in C Major; 徐家汇公园，爵士 C 大调



Xuhui Riverside Green Space, Jazz in C Major; 徐汇滨江绿地，爵士 C 大调



Lujiazui, Jazz C major; 陆家嘴，爵士 C 大调



Wusongkou, Jazz in C Major; 吴淞口, 爵士 C 大调



Wusongkou Fort, Jazz in C# Major; 吴淞口炮台湾, 爵士 C#大调



Wu Songkou Sacrifice, Jazz in F# minor; 吴淞口祭，爵士 F#小调



Dianshan Lake, Jazz scale in E major, B-flat minor; 淀山湖，爵士音阶 E 大调，降 b 小调



Dianshan Lake, Jazz in F Major; 淀山湖，爵士音阶 F 大调



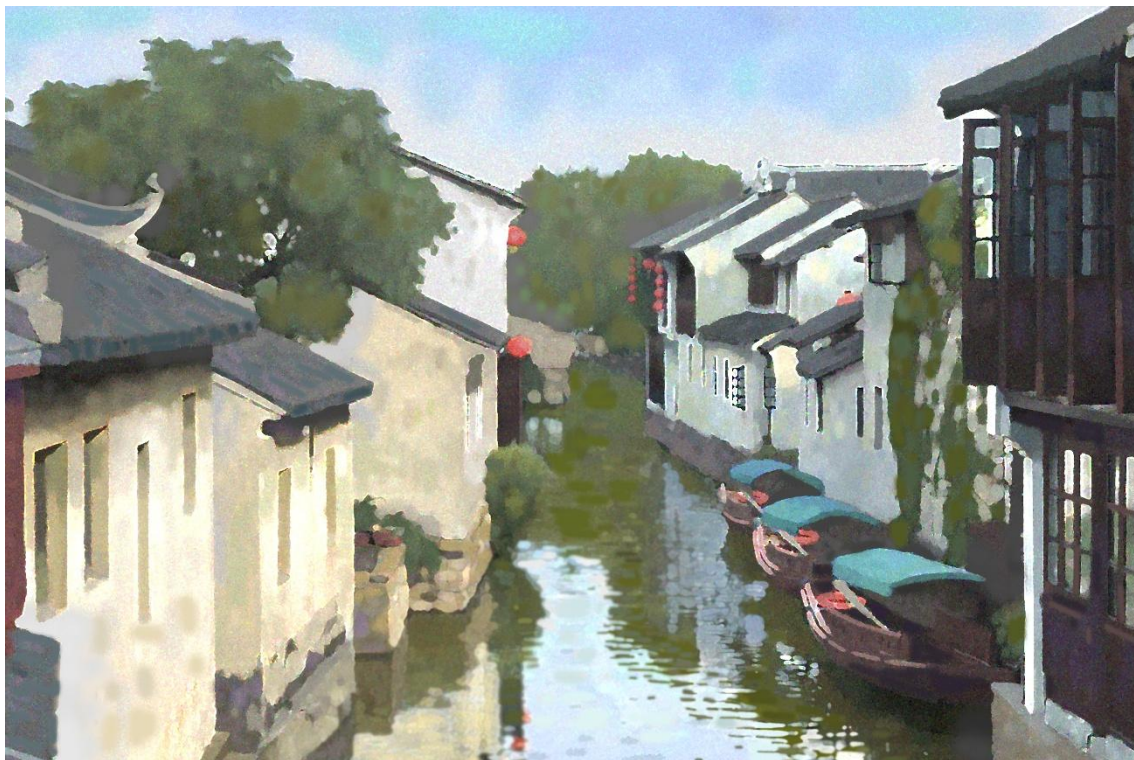
Wusongkou Battery, Jazz C11 chord; 吴淞口炮台，爵士 C11 和弦



Zhujiajiao, Jazz C11 Chord: 朱家角，爵士 C11 和弦



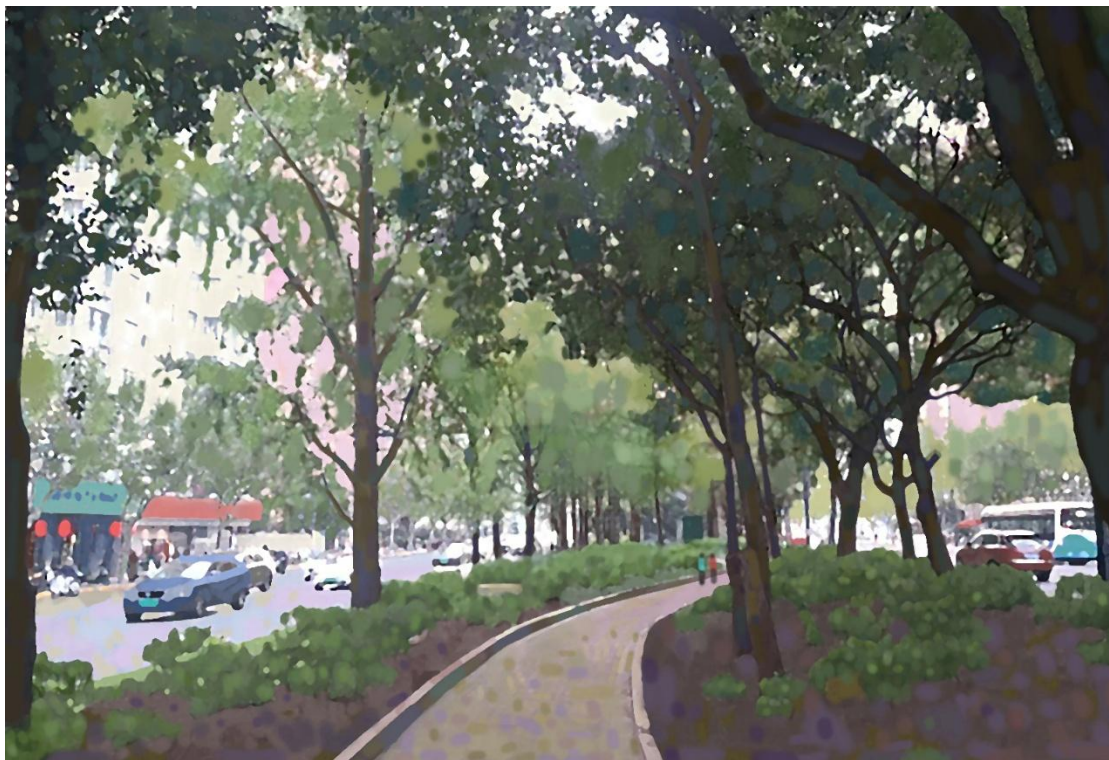
Zhujiajiao, Jazz C11 Chord: 朱家角，爵士 C11 和弦



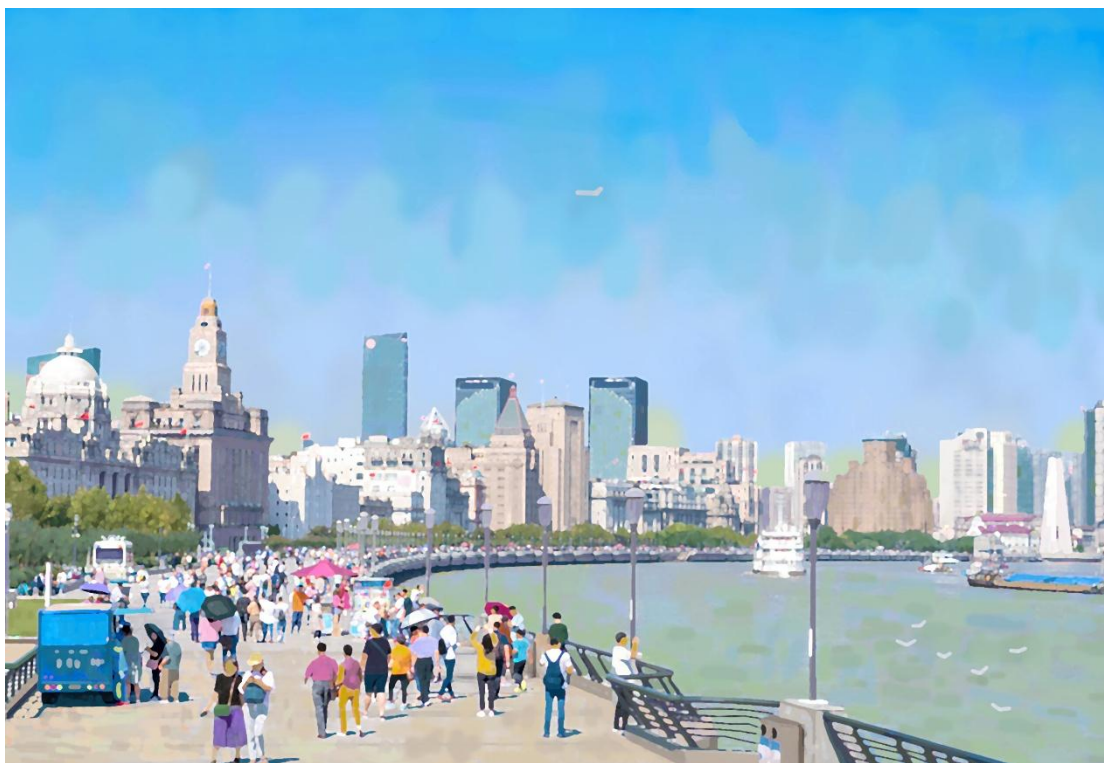
Zhouzhuang, Jazz C13 Chord; 周庄，爵士 C13 和弦



Zhouzhuang, Jazz C11 Chord; 周庄，爵士 C11 和弦



Zhaojiabang Road, Jazz in A-flat major; 肇家浜路，爵士降A大调



The sunshine on the Bund, jazz, C# major; 外滩的阳光，爵士C#大调



By the banks of the Huangpu River, Jazz in g minor; 黄浦江畔，爵士 g 小调



Ancient town in eastern Zhejiang, jazz, C major; 浙东古镇，爵士，C 大调



Ancient town in eastern Zhejiang, jazz, C# major; 浙东古镇，爵士，C#大调



Ancient town in eastern Zhejiang, jazz, C# major; 浙东古镇，爵士，C#大调



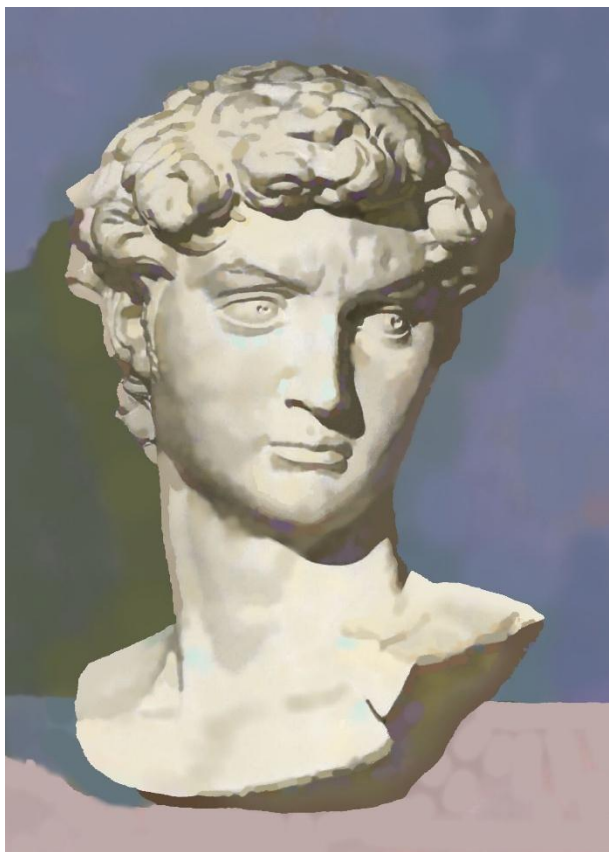
Self-portrait, Jazz scale C major, f# minor | 自画像，爵士音阶 C 大调，f# 小调



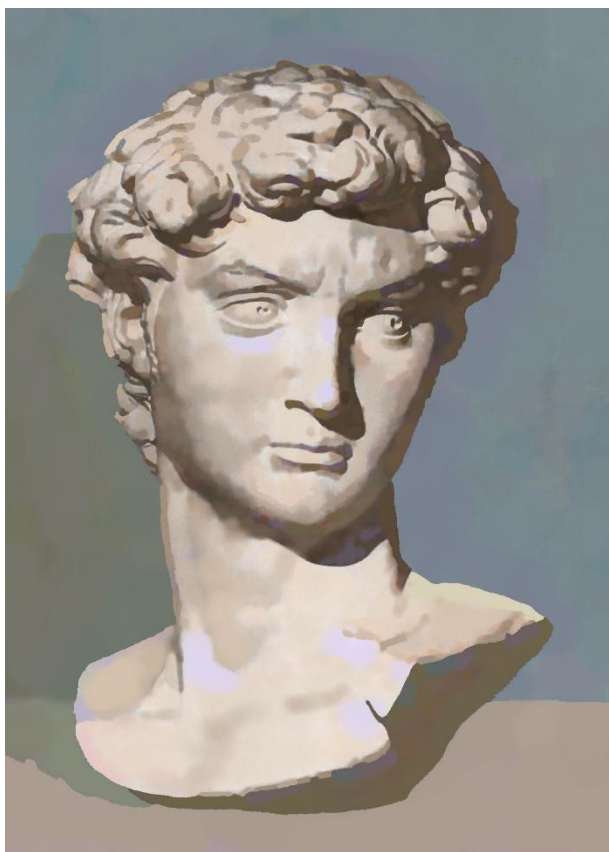
Self-portrait, Jazz pentatonic scale C major, f# minor | 自画像，爵士五声音阶 C 大调，f# 小调



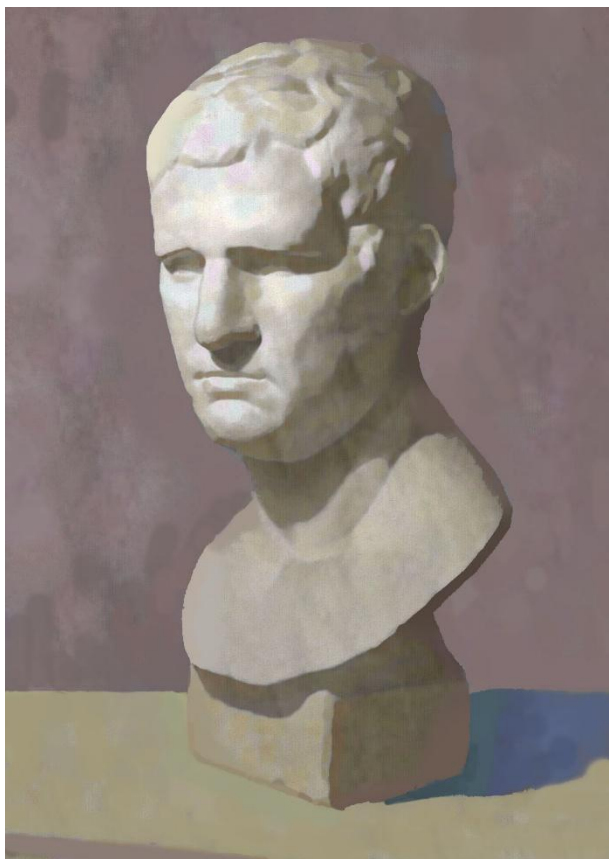
Self-portrait, Jazz C# major,g minor |自画像，爵士 C#大调，g 小调



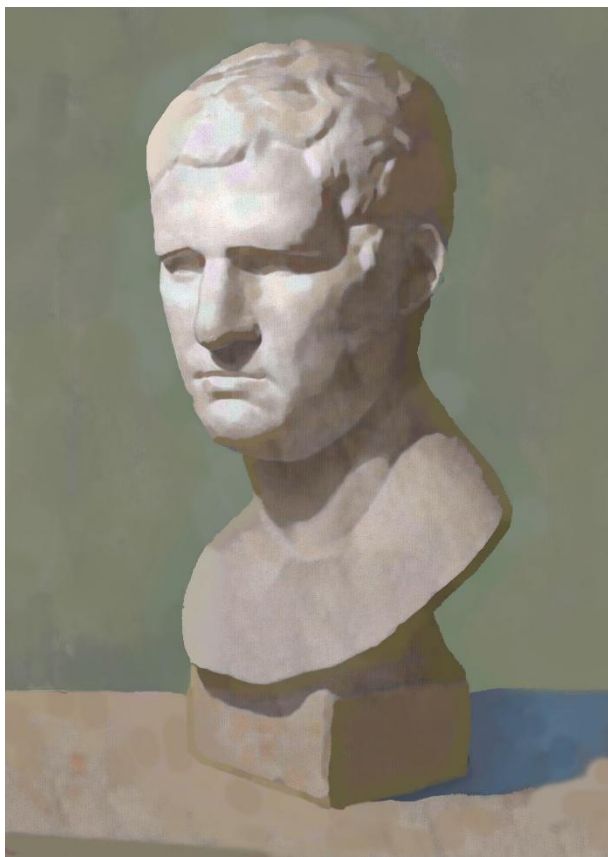
Jazz Scale C major,f-sharp minor；爵士音阶，C 大调，升 f 小调



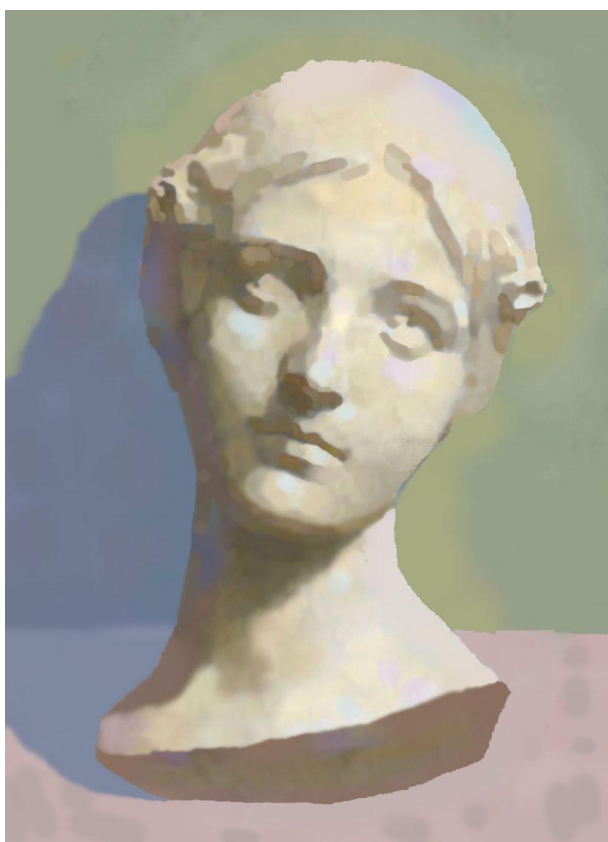
Plaster model, Jazz Scale C# major, g minor; 石膏像，爵士音阶，C#大调，g 小调



Plaster model, Jazz Scale C major, f sharp minor; 石膏像，爵士音阶，C 大调，升 f 小调



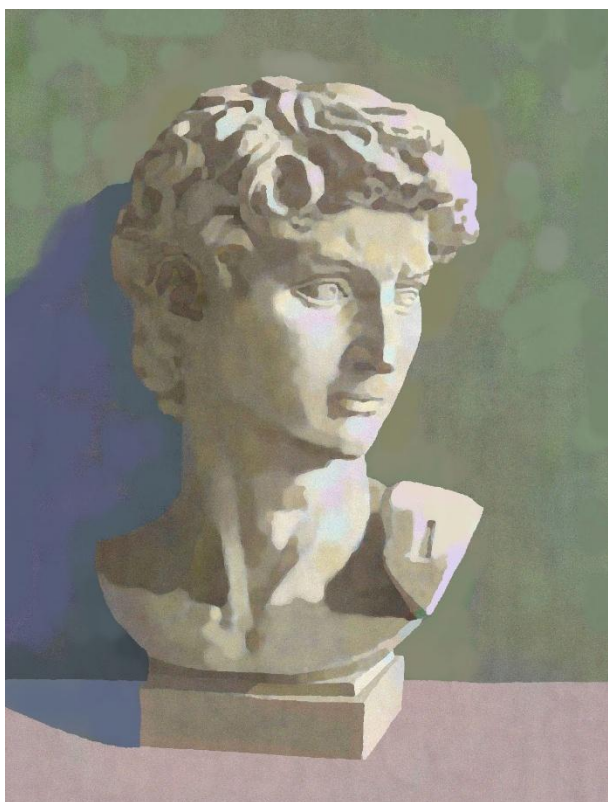
Plaster model, Jazz Scale C# major, g minor; 石膏像，爵士音阶，C#大调，g 小调



Plaster model, Jazz Scale C major, f sharp minor; 石膏像，爵士音阶，C 大调，升 f 小调



Plaster model,Jazz Scale C# major, g minor; 石膏像，爵士音阶，C#大调，g 小调



Plaster model,Jazz Scale C major, f sharp minor; 石膏像，爵士音阶，C 大调，升 f 小调



Plaster model, Jazz Scale C# major, g minor; 石膏像，爵士音阶，C#大调，g 小调



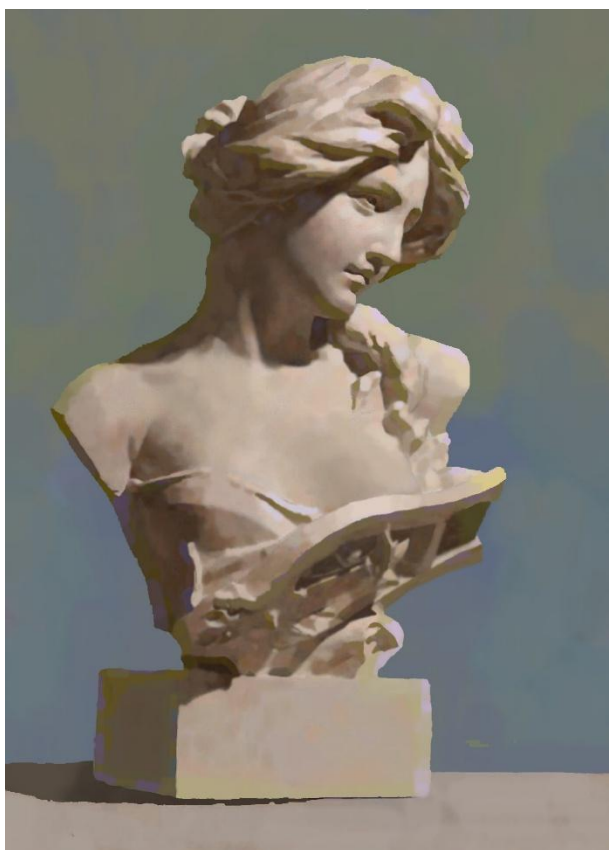
Plaster model, Jazz Scale C major, f sharp minor; 石膏像，爵士音阶，C 大调，升 f 小调



Plaster model,Jazz Scale A major, e-flat minor; 石膏像，爵士音阶，A 大调，降 e 小调



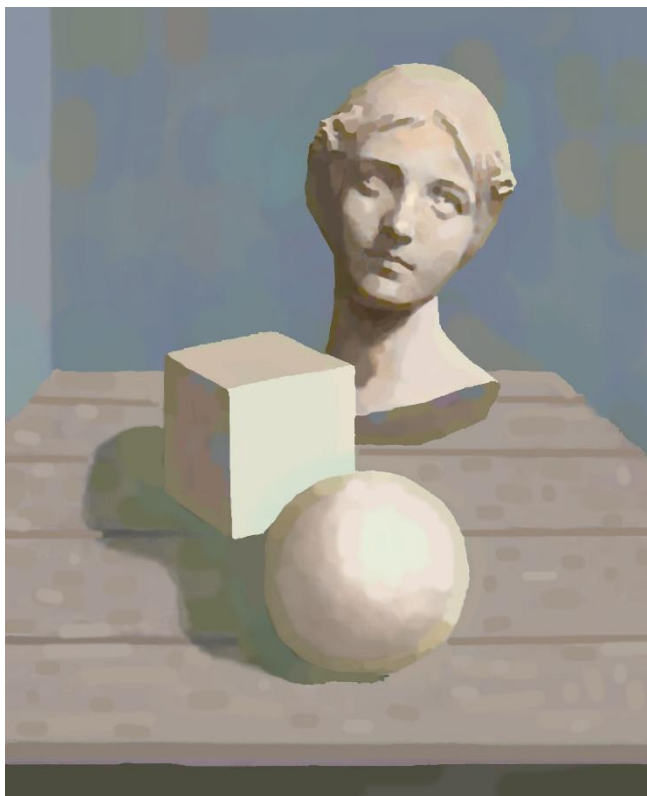
Jazz Scale C major,f-sharp minor; 爵士音阶，C 大调，升 f 小调



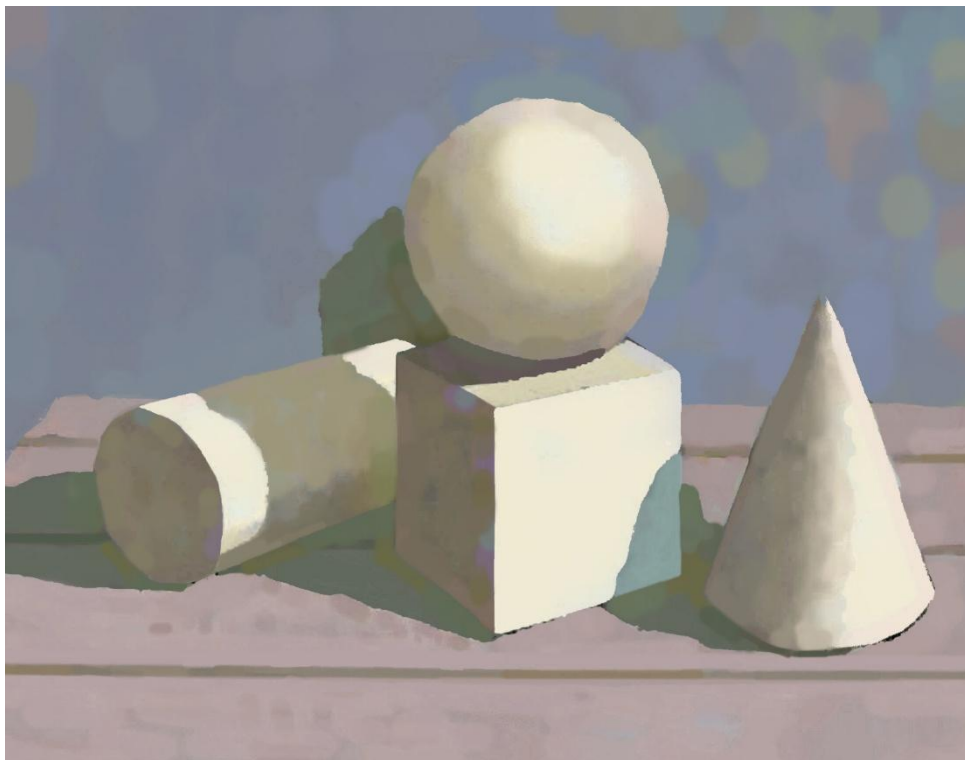
Plaster model, Jazz Scale C# major, g minor; 石膏像，爵士音阶，C#大调，g 小调



Plaster model, Jazz Scale C major, f sharp minor; 石膏像，爵士音阶，C 大调，升 f 小调



Plaster model, Jazz Scale C# major, g minor; 石膏像，爵士音阶，C#大调，g 小调



Plaster model, Jazz Scale C major, f sharp minor; 石膏像，爵士音阶，C 大调，升 f 小调



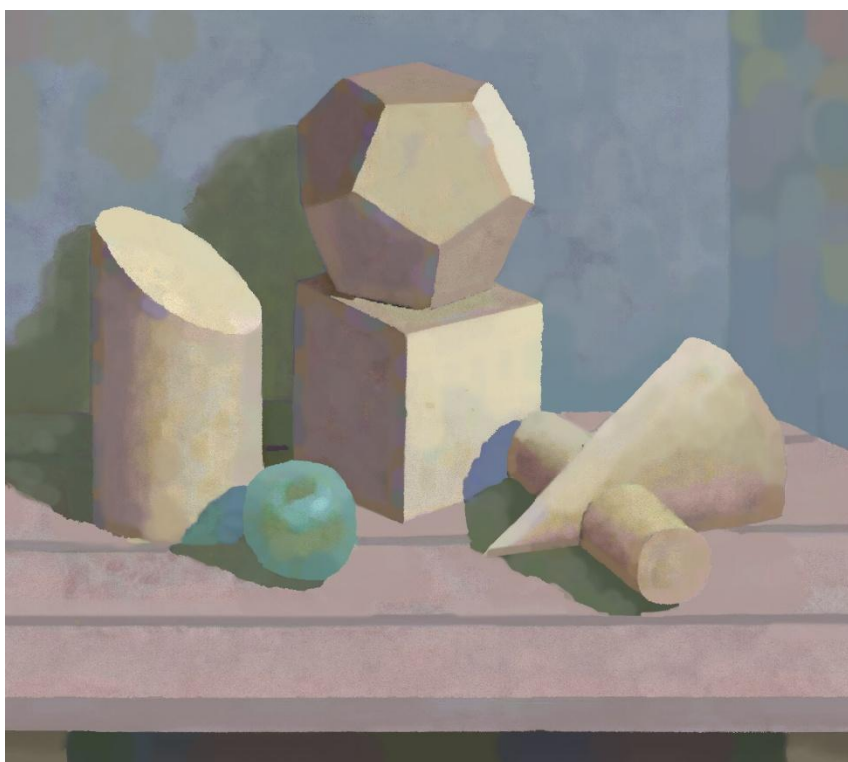
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Plaster model,Jazz Scale C major, f sharp minor; 石膏像，爵士音阶，C 大调，升 f 小调



Plaster model,Jazz Scale C# major, g minor; 石膏像，爵士音阶，C#大调，g 小调



Plaster model,Jazz Scale C major, f sharp minor; 石膏像，爵士音阶，C 大调，升 f 小调



Plaster model, Jazz Scale C# major, g minor; 石膏像，爵士音阶，C#大调，g 小调

3. Chromatic; 无调性



Still life, Atonal; 静物, 无调性



Still life,Atonal; 静物, 无调性



Still life,Atonal; 静物, 无调性



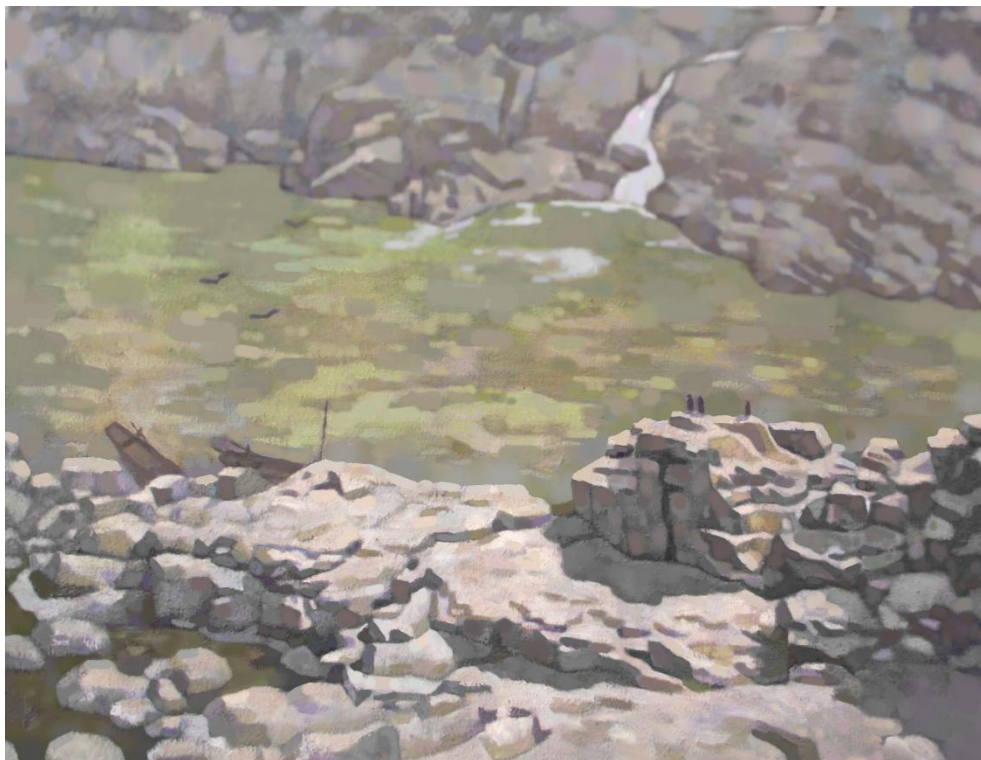
Still life,Atonal; 静物, 无调性



Still life,Atonal; 静物，无调性



Still life,Atonal; 静物，无调性



River valley,Atonal: 河谷，无调性



Fishing boat,Atonal: 渔舟，无调性



Lotus, Atonal: 荷花，无调性



Zhu Jiajiao, Atonal: 朱家角，无调性



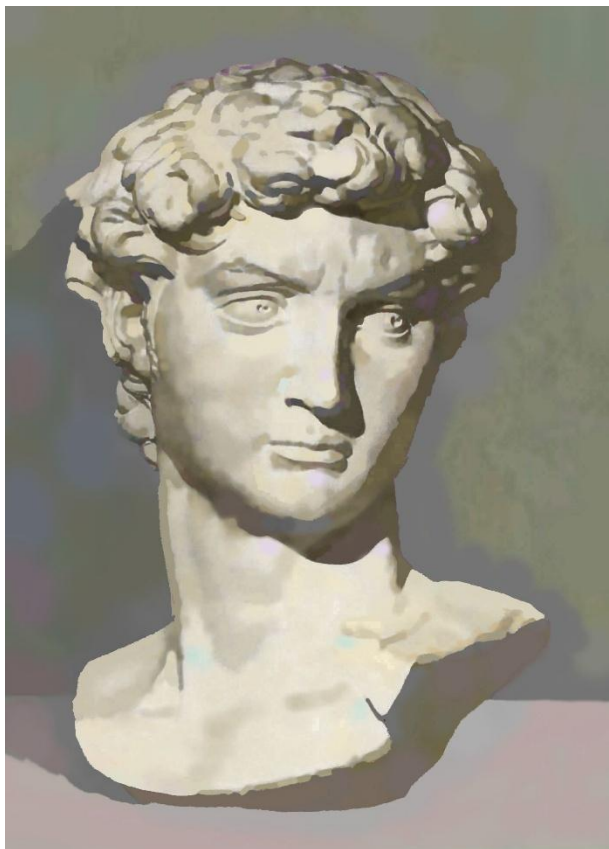
Zhu Jiajiao, Atonal: 朱家角，无调性



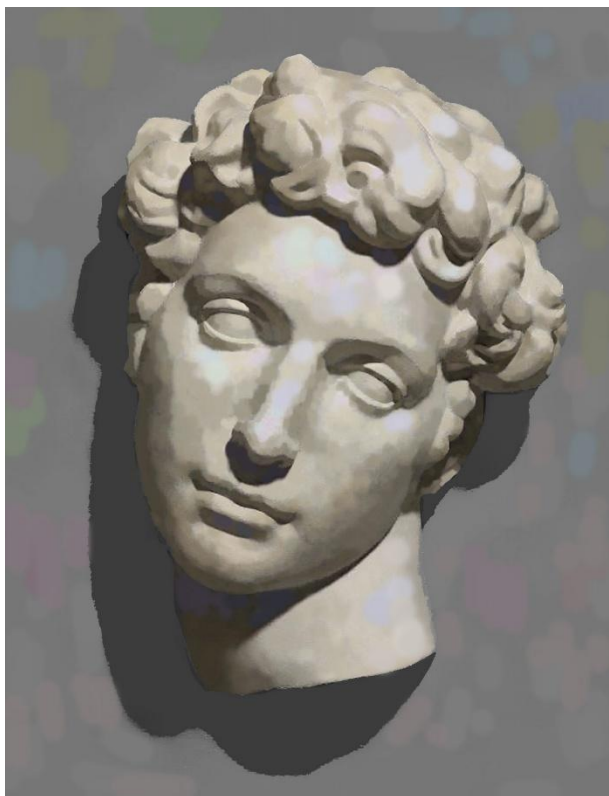
Zhou Zhuang, Atonal: 周庄，无调性



Plaster statue,Atonal; 石膏像，无调性



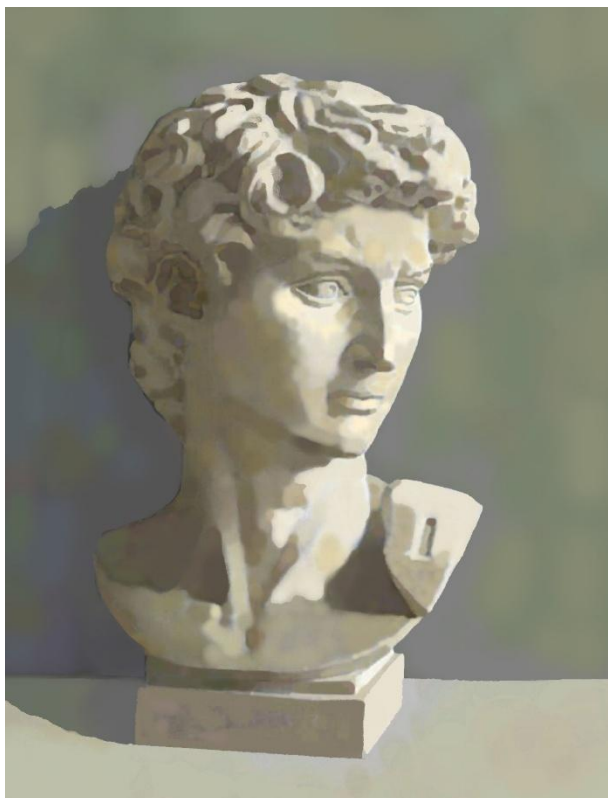
Plaster model,Atonal; 石膏像、无调性



Plaster model,Atonal：石膏像、无调性



Plaster model,Atonal：石膏像、无调性



Plaster model,Atonal：石膏像、无调性



Plaster model,Atonal：石膏像、无调性

4. Key Group; 调群



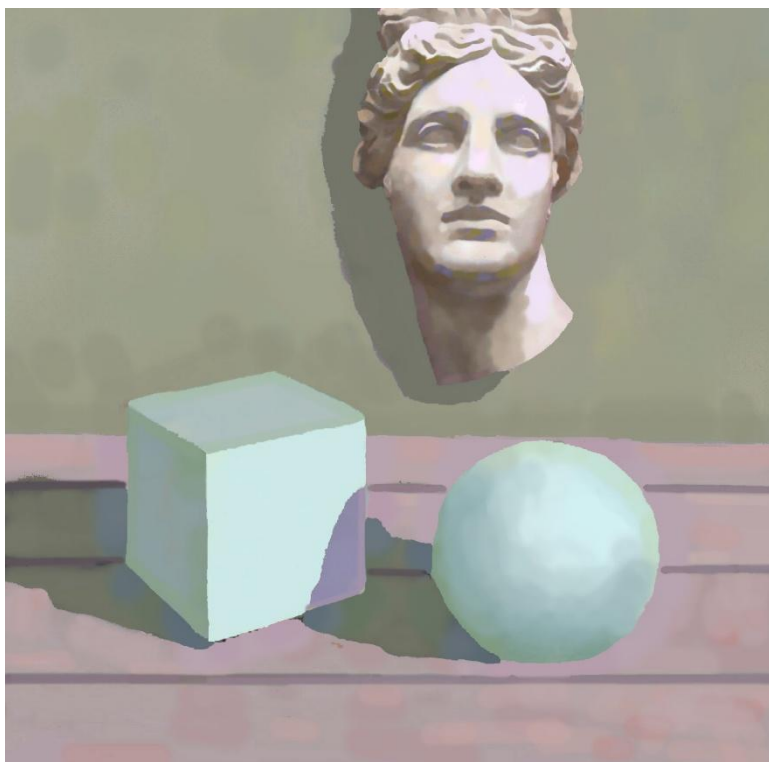
Plaster model C-D-E, key group: 石膏模型、C-D-E 调群



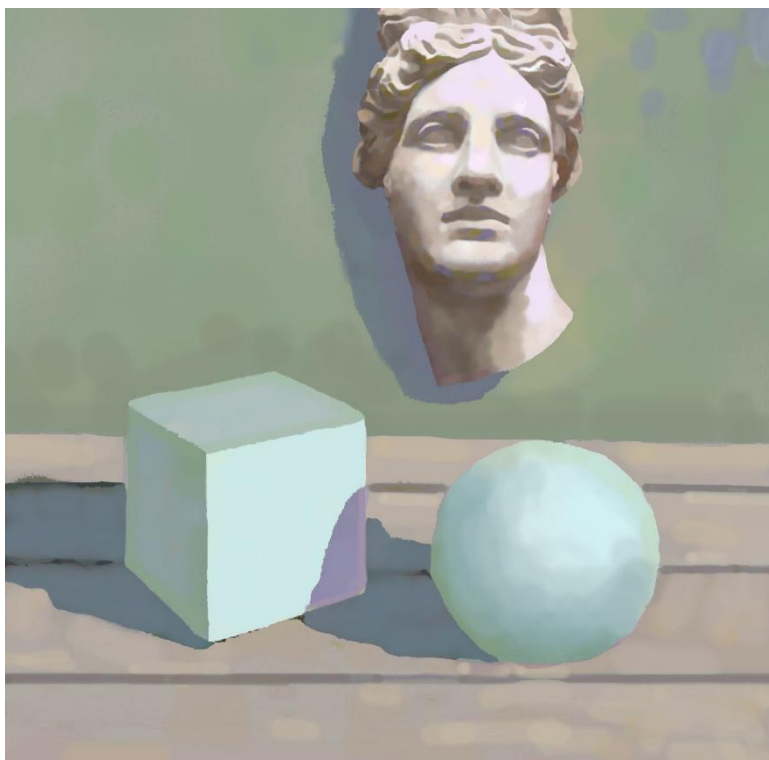
Plaster model C-D-E, key group: 石膏模型、C-D-E 调群



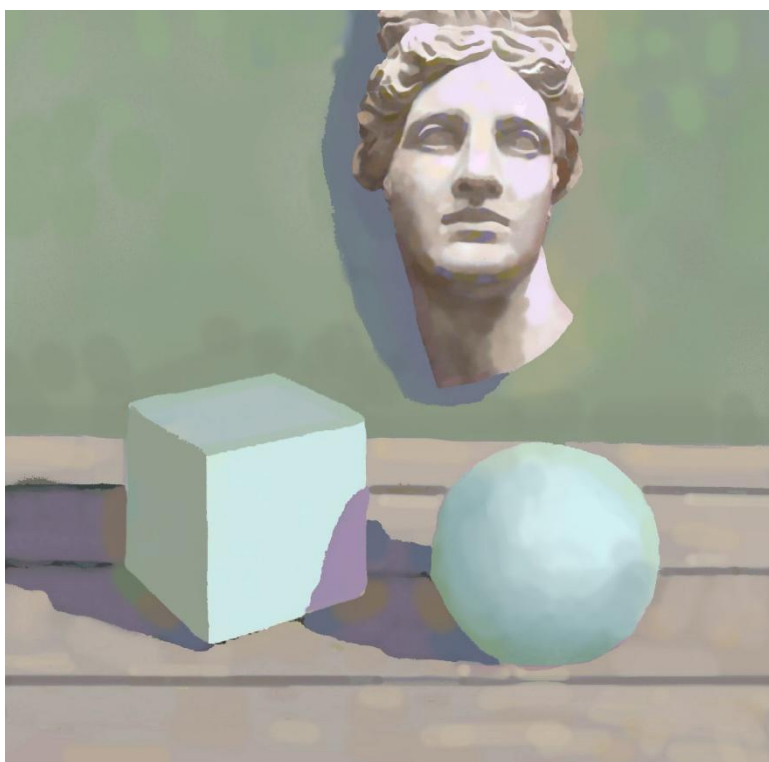
Plaster model C-D-E,key group: 石膏模型、C-D-E 调群



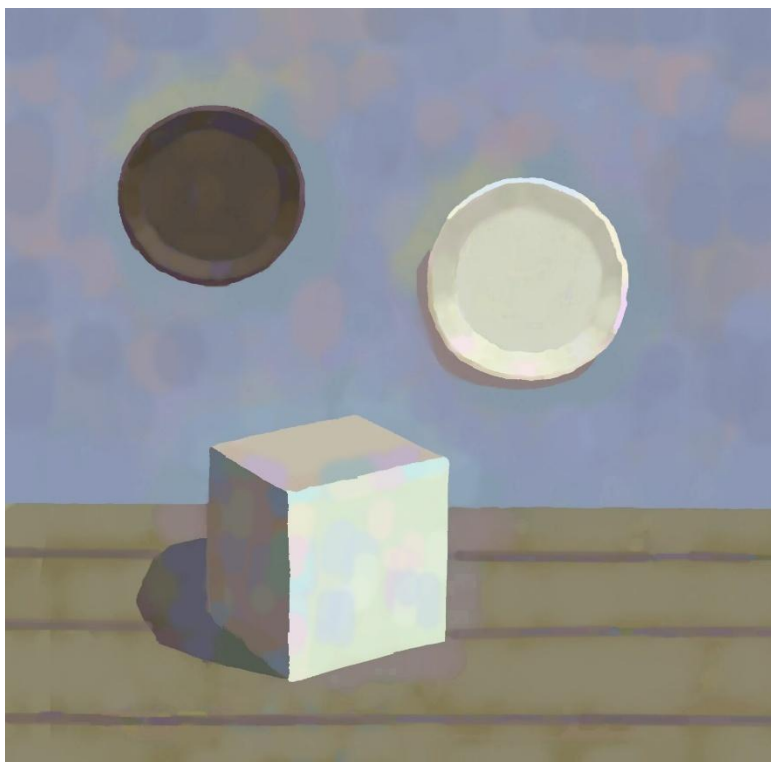
Plaster model C-D-E,key group: 石膏模型、C-D-E 调群



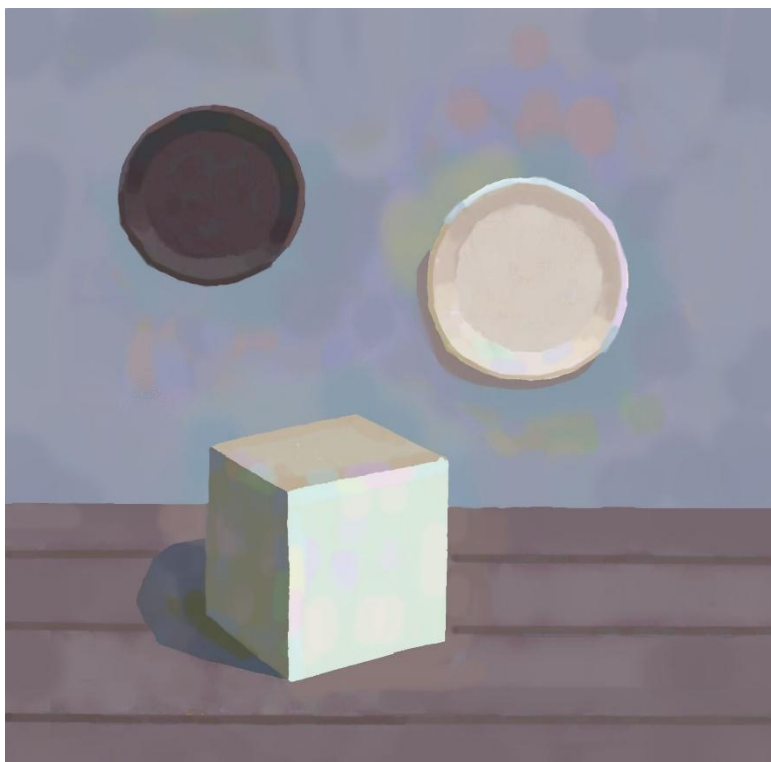
Plaster model C-D-E,key group: 石膏模型、C-D-E 调群



Plaster model C-D-E,key group: 石膏模型、C-D-E 调群



C major, f# minor, T-D-S key group | C 大调、f#小调，T-D-S 调群



C major, f# minor, T-D-S mixed tone group | C 大调、f#小调，T-D-S 混合调群



C major, Eb minor, T-D-S key group | C 大调、Eb 小调，T-D-S 调群



C major, f# minor, T-D-S key group | C 大调、f#小调，T-D-S 调群



C major, Eb minor, T-D-S key group | C 大调、Eb 小调，T-D-S 调群

Conclusion; 结语

《和弦语言》提出了一种以和弦结构为核心的观察方法，区别于以数学推导和假设为主的传统理论物理。其核心在于直接观察——既包括第一人称的内在体验，也包括第三人称的外在呈现——从而捕捉生命、精神与宇宙的整体和谐结构。世界在和弦语言中不被外部解释，而是在观察与体验中自我呈现，体现了存在的内在秩序与相互关联。通过音乐、绘画及直觉式感知，和弦语言架起科学与艺术的桥梁，提供了理解自然、生命与精神的新途径，为探索宇宙秩序和意识本质提供了一种可操作的实践框架。

Conclusion

Chord Language proposes an observational framework centered on harmonic structures, distinct from traditional theoretical physics, which relies primarily on mathematical derivation and hypotheses. Its core lies in direct observation—encompassing both first-person inner experience and third-person external manifestation—thereby capturing the integrated, harmonious structures of life, mind, and the universe. In Chord Language, the world is not externally explained but reveals itself through observation and experience, reflecting intrinsic order and interconnection. Through music, painting, and intuitive perception, Chord Language bridges science and art, offering a novel approach to understanding nature, life, and consciousness, and providing an operational framework for exploring cosmic order and the essence of awareness.

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