

# FLUX WIKI

## AUTONOMOUS SEQUENCING

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HOW FLUX SEQUENCES ISSUE PHOTOGRAPHS — THE CANONICAL CHRONOLOGICAL DEFAULT,  
EXPERIMENTAL AI ALTERNATIVES, AND THE LIMITS OF WHAT A MACHINE CAN SEQUENCE.

[flux.dantesisofo.com/wiki/autonomous-sequencing/](https://flux.dantesisofo.com/wiki/autonomous-sequencing/)

FLUX\_WIKI\_v2.0

JUNE 2026

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FLUX DOCUMENTATION SYSTEM Layer 5 – INTELLIGENCE | autonomous-sequencing  
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## AUTONOMOUS SEQUENCING

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### 1. THE SEQUENCING PROBLEM

A FLUX issue contains 36 photographs. They must be arranged in a sequence. The sequence is the editorial layer – it determines how the issue reads, how images relate to each other, and what the issue means as a document.

36 photographs can be arranged in  $36! = \sim 3.7 \times 10^{41}$  possible sequences. Most are incoherent. The sequencing problem is: which of these sequences is the right one? This is editorial work. It is also, partially, a computational problem.

### 2. CURRENT APPROACH – CHRONOLOGICAL DEFAULT

The canonical sequencing algorithm for FLUX is chronological order.

Photographs appear in the order they were made. Page 5 is the earliest photograph in the issue. Page 40 is the latest. The sequence is determined entirely by the `captured_at` timestamp.

Chronological is the canonical default. It is always correct. It is always honest.

```
def sequence_issue(photos):  
    return sorted(photos, key=lambda p: p.captured_at)
```

This is the sequencing algorithm in `issue_builder_worker.py`. It has two lines. It is not wrong.

### 3. WHY CHRONOLOGICAL IS CANONICAL

Chronological order is not a fallback. It is not what the system does when it cannot figure out something smarter. It is the correct answer.

The FLUX issue is a record of movement through time. The photographer walked a route. They made photographs in a sequence. That sequence was already the editorial act – where to stop, when to shoot, what to frame, what to walk past. The issue should honor that sequence.

The sequence is a record of the walk. Reordering would falsify the record.

Heraclitus: you cannot step in the same river twice. The walk was a specific river at a specific moment. The sequence of photographs is the record of that river.

Rearranging them is not editing – it is lying about what happened.

Chronological is also practically superior for the FLUX corpus: the archive is a continuous daily practice spanning years. Every issue is a window into a specific

period. Chronological order preserves the integrity of that window.

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#### 4. WHAT AI SEQUENCING EXPERIMENTS COULD TRY

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AI sequencing is not a replacement for chronological order. It is a parallel experiment.

The intelligence layer can propose alternative sequence drafts based on visual features. These are experimental outputs for the photographer to review.

**Visual similarity clustering:** Group photographs by visual similarity using embeddings. Similar images cluster together. The sequence moves from cluster to cluster rather than moment to moment.

**Tonal progression:** Order photographs from darkest to lightest (or reverse), creating a tonal arc across the issue.

**Subject alternation:** Identify recurring subjects (people, empty streets, architectural elements). Alternate between subject types to create visual rhythm.

**Compositional rhythm:** Score each photograph for compositional density (busy vs. sparse). Alternate high-density and low-density frames to create breathing room.

**Transition scores:** Score each adjacent pair of frames for visual compatibility. Use a traveling-salesman-style optimization to find a sequence that maximizes pairwise compatibility.

None of these are the right answer. They are experiments. Some will produce interesting sequences. Some will produce incoherent ones. The photographer decides whether any experimental sequence is worth using.

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#### 5. THE LIMIT

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The AI does not know why a photograph was made.

This is the fundamental limitation of algorithmic sequencing. CLIP sees composition, tone, subject matter. It does not see intention. It does not know that the blurry photograph at position 14 was made while running. It does not know that the empty alley at position 22 was made thirty seconds after a conversation that changed the session. It does not know what the photographer was thinking.

Chronological order knows these things implicitly. The walk knew. The sequence the photographer walked is already the right sequence.

AI sequencing can produce visually coherent sequences. It cannot produce editorially honest sequences. Chronological order always knows why.

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#### 6. IMPLEMENTATION

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Pairwise visual similarity score using embeddings:

```
def pairwise_similarity(photos, embeddings):
    """
    For each pair of adjacent photographs in a proposed sequence,
    compute cosine similarity between their embeddings.
    Returns mean pairwise similarity as a sequence quality score.
    """
    import numpy as np
    scores = []
    for i in range(len(photos) - 1):
        a = embeddings[photos[i].photo_id]
        b = embeddings[photos[i+1].photo_id]
        score = np.dot(a, b) # embeddings are L2-normalized; dot = cosine sim
        scores.append(score)
    return np.mean(scores)
```

Experimental re-ranking (greedy nearest-neighbor sequence):

```
def greedy_visual_sequence(photos, embeddings):
    """
    Build a sequence by starting with the photograph most dissimilar
    to all others (edge of the embedding space), then repeatedly
    appending the photograph most similar to the current last frame.
    """
    import numpy as np
    remaining = list(photos)
    # Start with the photograph furthest from the centroid
    vecs = np.array([embeddings[p.photo_id] for p in remaining])
    centroid = vecs.mean(axis=0)
    start_idx = np.argmin([np.dot(v, centroid) for v in vecs])
    sequence = [remaining.pop(start_idx)]

    while remaining:
        last_vec = embeddings[sequence[-1].photo_id]
        similarities = [np.dot(last_vec, embeddings[p.photo_id]) for p in remaining]
        next_idx = np.argmax(similarities)
        sequence.append(remaining.pop(next_idx))

    return sequence
```

This generates one experimental sequence. It is not chronological. It is a visual chain. The photographer compares it to the chronological sequence.

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## 7. CURATOR OVERRIDE

All AI sequencing is advisory.

The photographer always has final control. The portal will present: 1. Canonical sequence (chronological) – always available, always the default 2. Experimental sequence(s) – labeled as AI-generated, marked as drafts

The photographer can: - Accept the chronological sequence (requires no action) - Review an experimental sequence and accept it - Review an experimental sequence, modify it manually, and accept the modified version - Reject all experimental sequences and use chronological

Chronological is always one click away. It is never disabled.

## 8. RELATIONSHIP TO KEEPER SCORING

Sequencing operates after selection. Only photographs with keeper scores above the threshold are eligible for sequencing.

The workflow:

1. New photographs arrive in /FLUX\_INBOX/
2. Ingest pipeline runs: EXIF extraction, metadata enrichment, embedding, keeper scoring
3. Photographer reviews portal: photographs sorted by keeper\_score (descending)
4. Photographer approves photographs for the archive
5. When 36 approved unassigned photographs accumulate → issue\_builder\_worker.py triggers
6. issue\_builder\_worker.py sequences the 36 photographs chronologically
7. [FUTURE] AI sequencing alternatives are generated and presented alongside chronological
8. Photographer approves sequence → PDF generated

The keeper model determines which photographs reach step 5. The sequencing algorithm determines the order at step 6. They are sequential, not parallel.

### SEE ALSO

Document	Layer	Relationship
INTELLIGENCE	Layer 5 – Intelligence	Layer overview; sequencing is a subdocument
EMBEDDINGS	Layer 5 – Intelligence	Provides the similarity vectors used in experimental sequencing
KEEPER MODEL	Layer 5 – Intelligence	Produces keeper_score that gates which photos reach sequencing
PROTOCOL	Layer 2 – Protocol	Establishes chronological as the canonical sequence; sequencing must honor this
ROADMAP	Layer 8 – Roadmap	Phase 6 includes experimental AI sequencing; canonical chronological is Phase 1

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