REFLECTION &

What I learned:

- Converting ancient logic into interactive visuals requires iteration and testing.

Challenges faced:

- Translating complex flower symmetry into data for particle motion
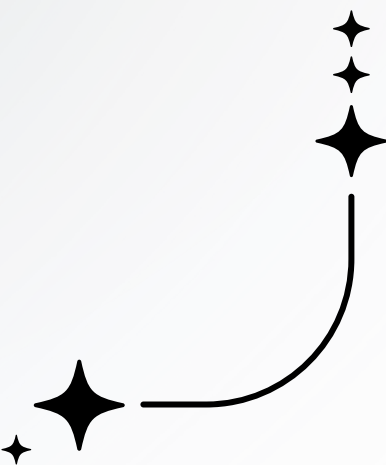- Balancing storytelling and generative control

Next steps:

- Expand pattern library:
- integrate other traditional motifs
- Potential collaboration with textile museums, digital heritage festivals

CONTENTS

PROJECT SUMMARY

WeaveCode is an interactive visual experience project that fuses the punched–card logic of the Jacquard loom, traditional Baoxiang flower patterns, and real–time particle animation. Using AR and digital media, it reimagines weaving as a data–driven, programmable process—where the unseen logic of textile creation becomes a visible, generative visual story.

COLLECTION

Reference Object: **Ribbon Loom with Jacquard Head** (Object No. CO8404795)

From: Science Museum Group Collection

View item here

✨ Principle Summary:

- Punched cards: Each card controls which warp threads are lifted —like a simple code instruction.

- Hooks & Harnesses: Mechanically raise specific threads as directed by card holes.

- Pattern generation: The weft thread passes through, and a visible design is created row by row.

- Computational logic: The loom is considered an early example of programmable logic, inspiring modern computing.
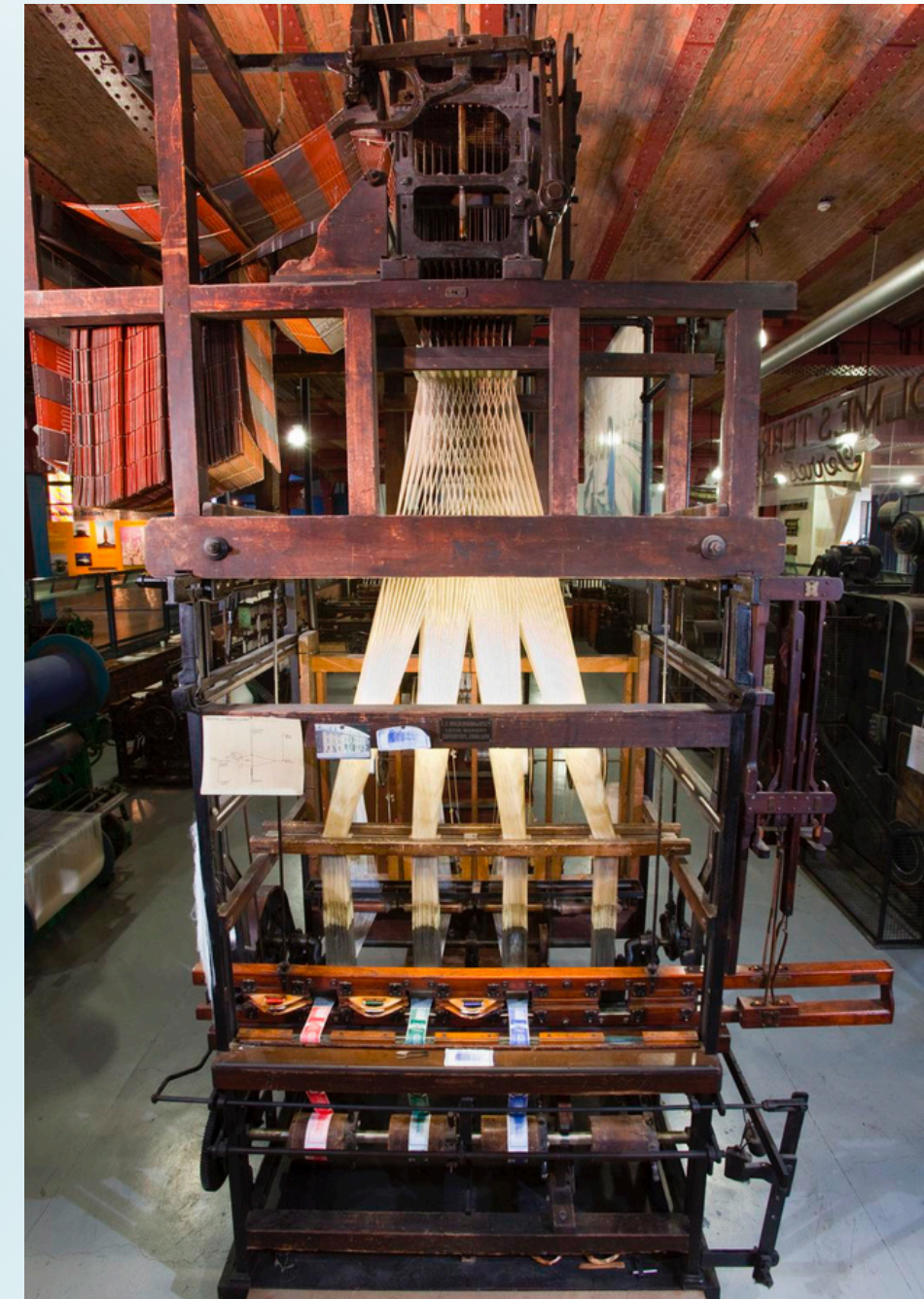
INTERACTION

Q1: How do we encourage exploration and discovery?

We encourage exploration by allowing users to scan fabric patterns, which then transform into real-time particle animations that reveal how traditional woven motifs are constructed—almost like decoding visual algorithms.

Each scan generates a unique animated experience, letting users discover how threads, logic, and visuals interconnect.

This interactive system transforms viewers into curious investigators, inviting them to uncover the hidden logic behind each design, rather than just passively observe.
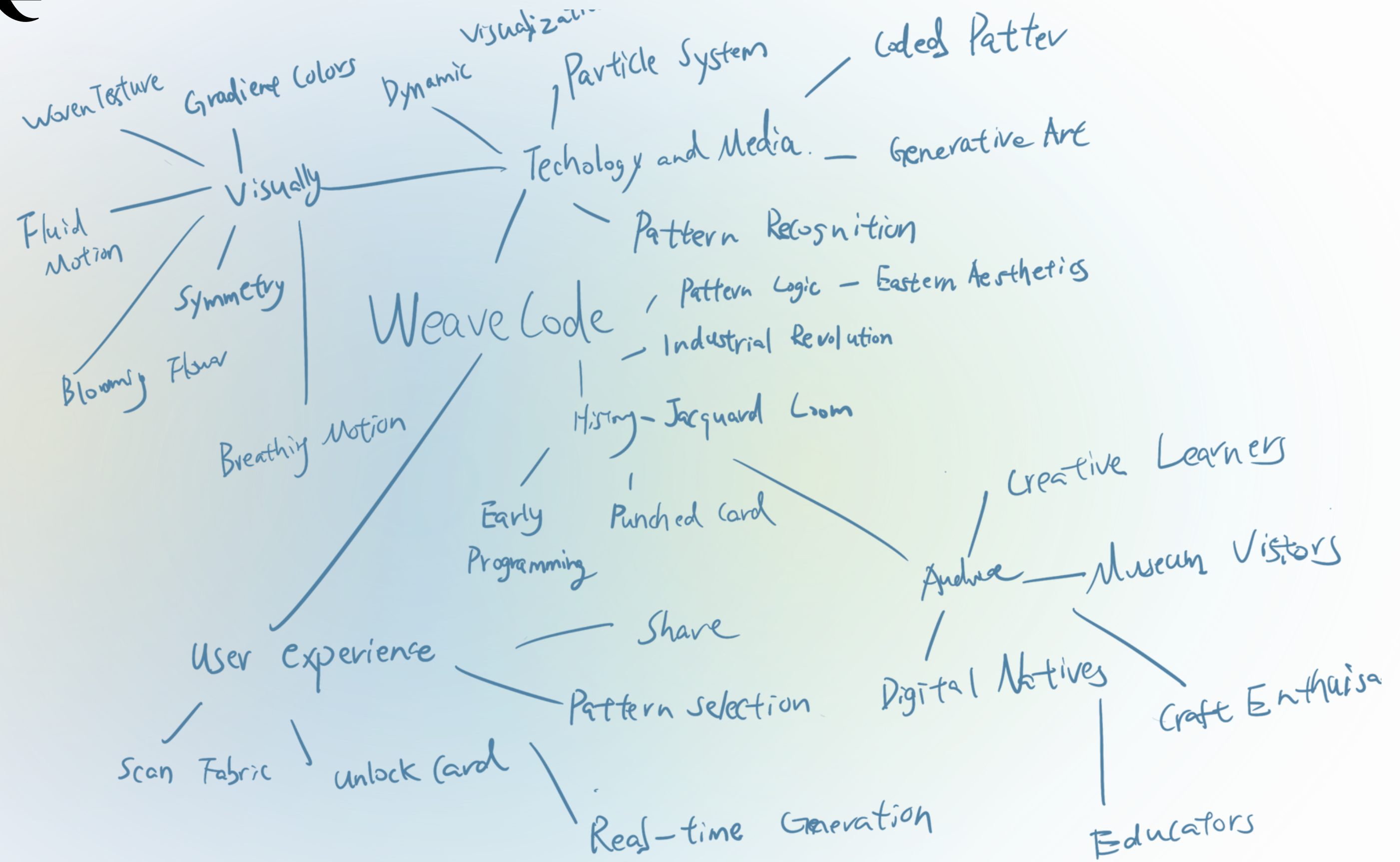
We transformed the complex logic of weaving into a fun, code-like VR dynamic visual.

Every time we scan the pattern, particles start to rotate, flow, and weave into a flower, making the image soft, smooth, and full of life.
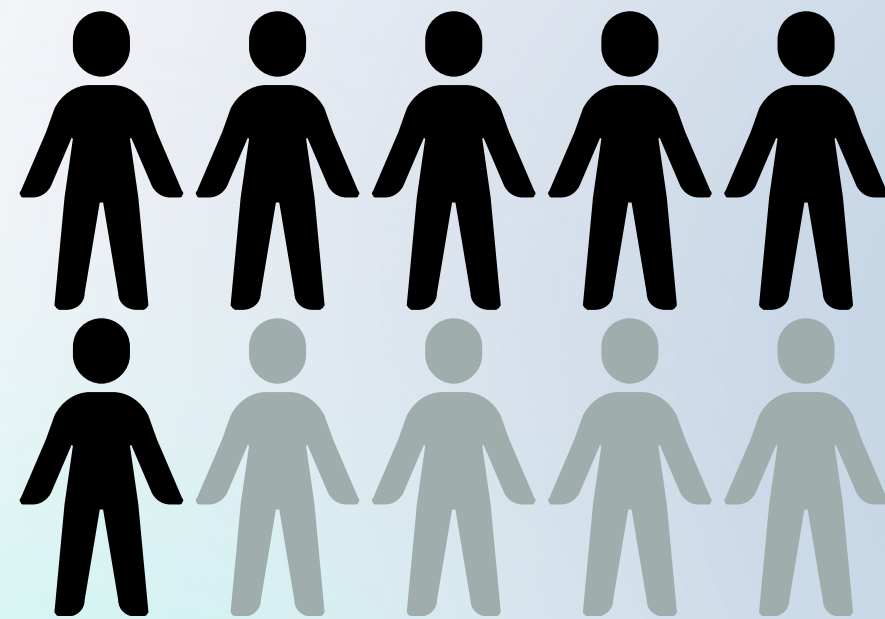
Making the weaver no longer dead, it can move, the particles are like holes finally weaving a flower pattern.

## Q2: How do we make the experience more playful and delightful?

MINDMAP

Woven Texture — Gradient Colors — Dynamic — Visualization

Particle System — Coded Pattern

Visually — Technology and Media — Generative Art

Fluid Motion

Symmetry

Blooming Flower

Breathing Motion

Weave Code

Pattern Recognition

Pattern Logic — Eastern Aesthetics

Industrial Revolution

History — Jacquard Loom

Early Programming — Punched Card

Creative Learners

User Experience — Share

Audience — Museum Visitors

Pattern Selection — Digital Natives

Scan Fabric — Unlock Card

Real-time Generation

Craft Enthusiast

Educators

TARGET AUDIENCE

| Segment	Description
Creative Youth	Interested in generative art, design systems, code visuals
Educators/Students	Especially in design or computational art fields
Museum Visitors	Curious about tech-art-cultural fusions
Craft Enthusiasts	Appreciate traditional patterns, weaving, textile design

MOODBOARD
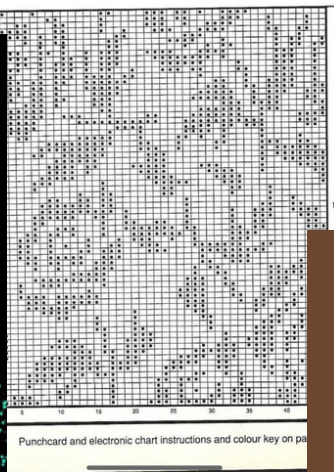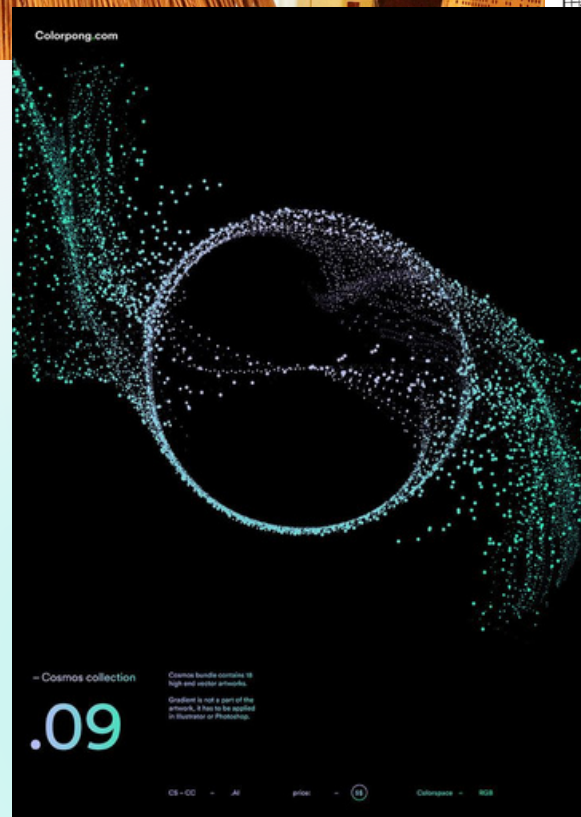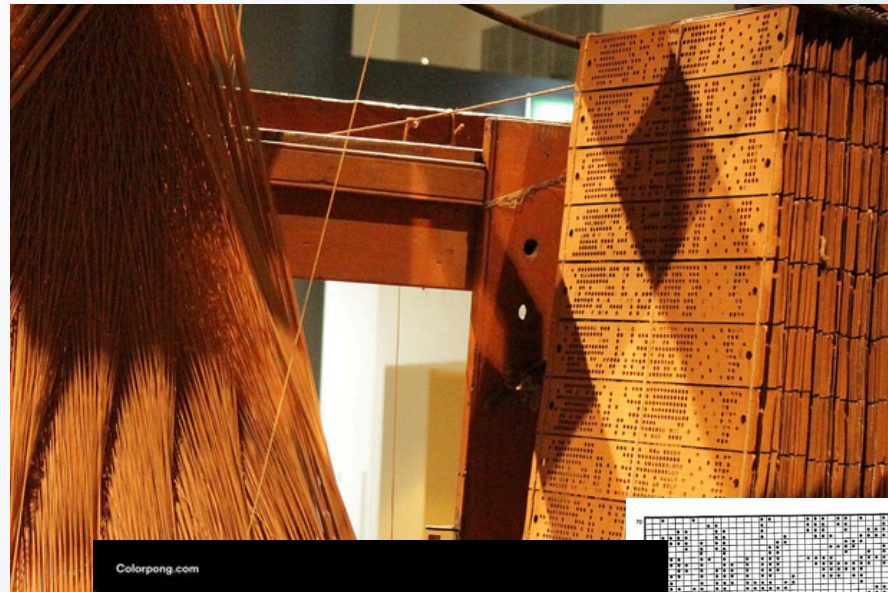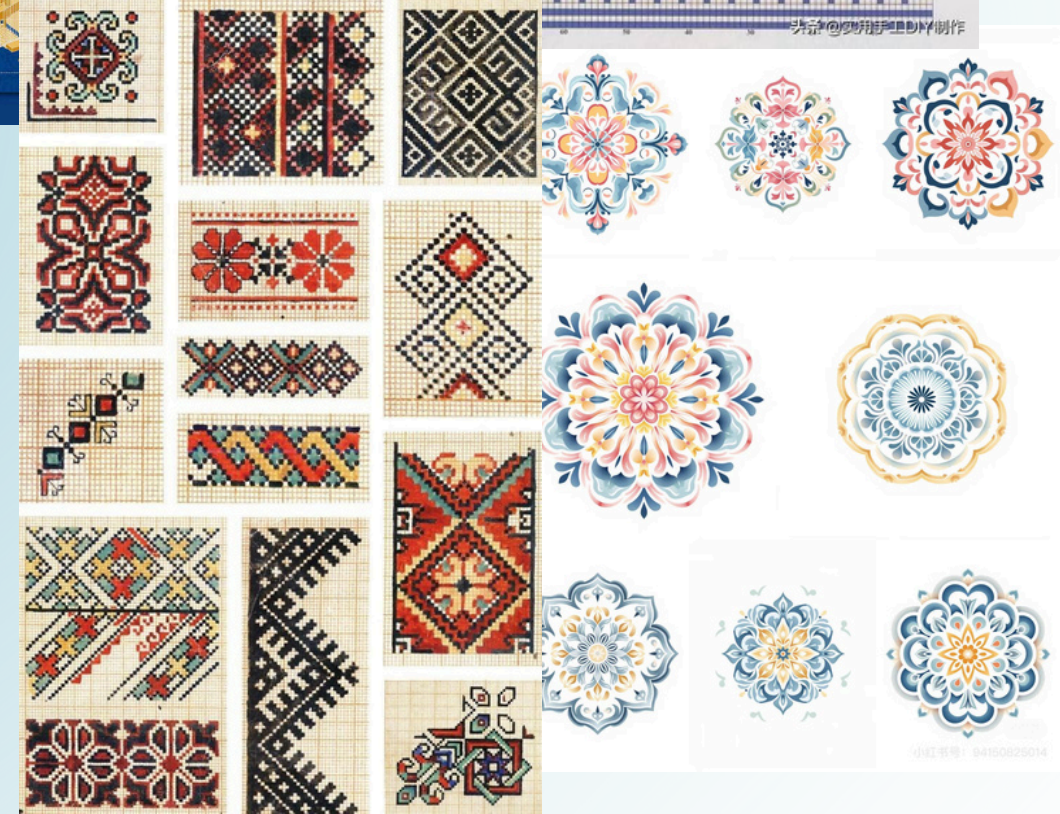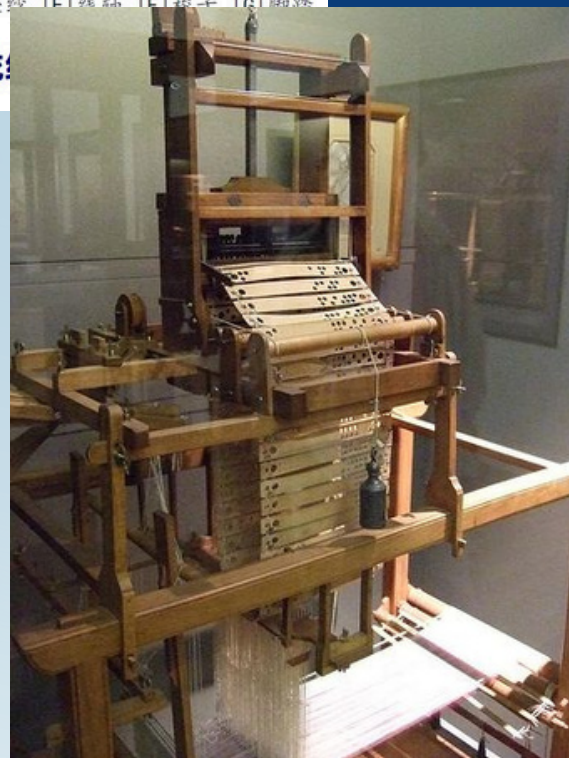
CONCEPT & INSPIRATION

01

- Based on punch–card logic of Jacquard weaving —code as pattern.
- Particles are treated as digital threads, obeying invisible "cards."

02

- The Baoxiang flower, rich in symmetry and cultural meaning, represents the fusion of aesthetic and algorithm.

03

- WeaveCode turns weaving into a generative digital performance— where code becomes floral.
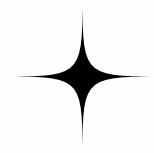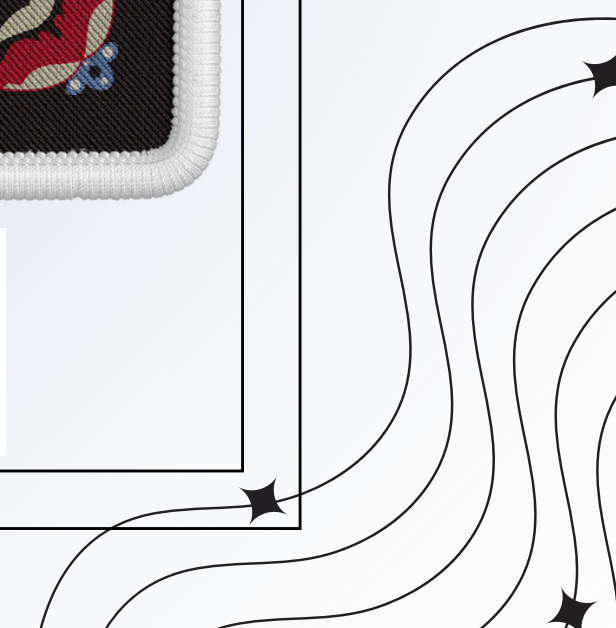
AR EXPERIENCE DEMONSTRATION

SCANNING AR EFFECT

Motion Poster Display

"See the breath of patterns. Hear the voice of the loom."
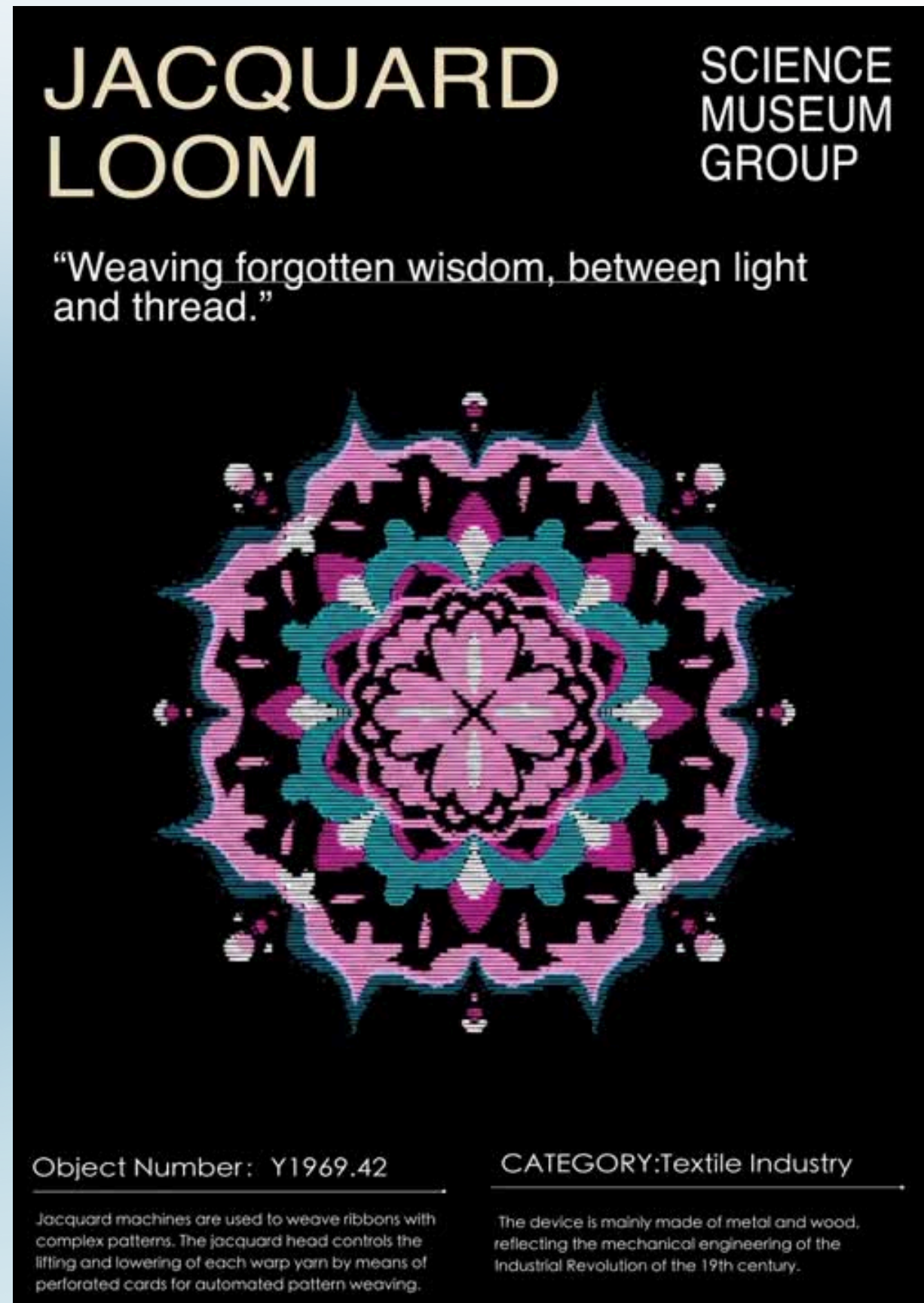
https://youtube.com/shorts/QmPSuVDvIZ4?feature=share

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THANK YOU