FABRICADEMY
textile and technology academy

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PRESENCE · RHYTHM · INTTELIGENCE

Gratitude Loom

A Ritual Instrument for Weaving Presence

When was the last time you were here?

A sense of always moving —
but never quite arriving.

What if slowing down was the practice?

Ritual

Gratitude

The loom gives the AI a body

THE POLAROID BOOK

RITUAL FEEDBACK CYCLE

Groq

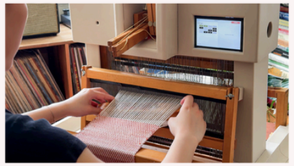
a distant intelligence — it listens, it chooses, it speaks

listens	*to your gratitude and the rhythm of your weaving*
chooses	*the next pattern — from the matrix, or one newly born*
speaks	*the words back, as a voice that has heard you*

spoken word + woven data ↑

↓ *sounded voice + chosen/ generated pattern*

The Weaver



the source of presence

PRESENCE

OFFERINGS

- *a spoken gratitude*
- *an intention named*
- *the motion of weaving*

The Loom

THE BODY OF THE WORK

Sensors
the motion of your hands

Microphone
your spoken word

Touchscreen
what you set in motion

Raspberry Pi

a small computer at the heart of the loom

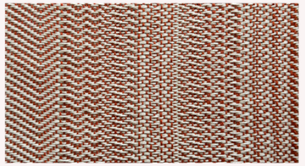
- *reads the sensors*
- *scores rhythm and attentiveness*
- *sends the moments to groq*
- *carries the answer back*

listening, scoring, choosing

Speaker
the loom answers in voice

Touchscreen
what the loom shows you in pattern

Woven Cloth



a record of presence

TRACE

GUIDANCE

- *shaft combinations*
- *sequences woven*
- *words spoken aloud*

The Pattern Deepens
with sustained steadiness

The Pattern Softens
when continuity drifts

Gratitude Loom

System Overview

CO-REGULATION LOOP

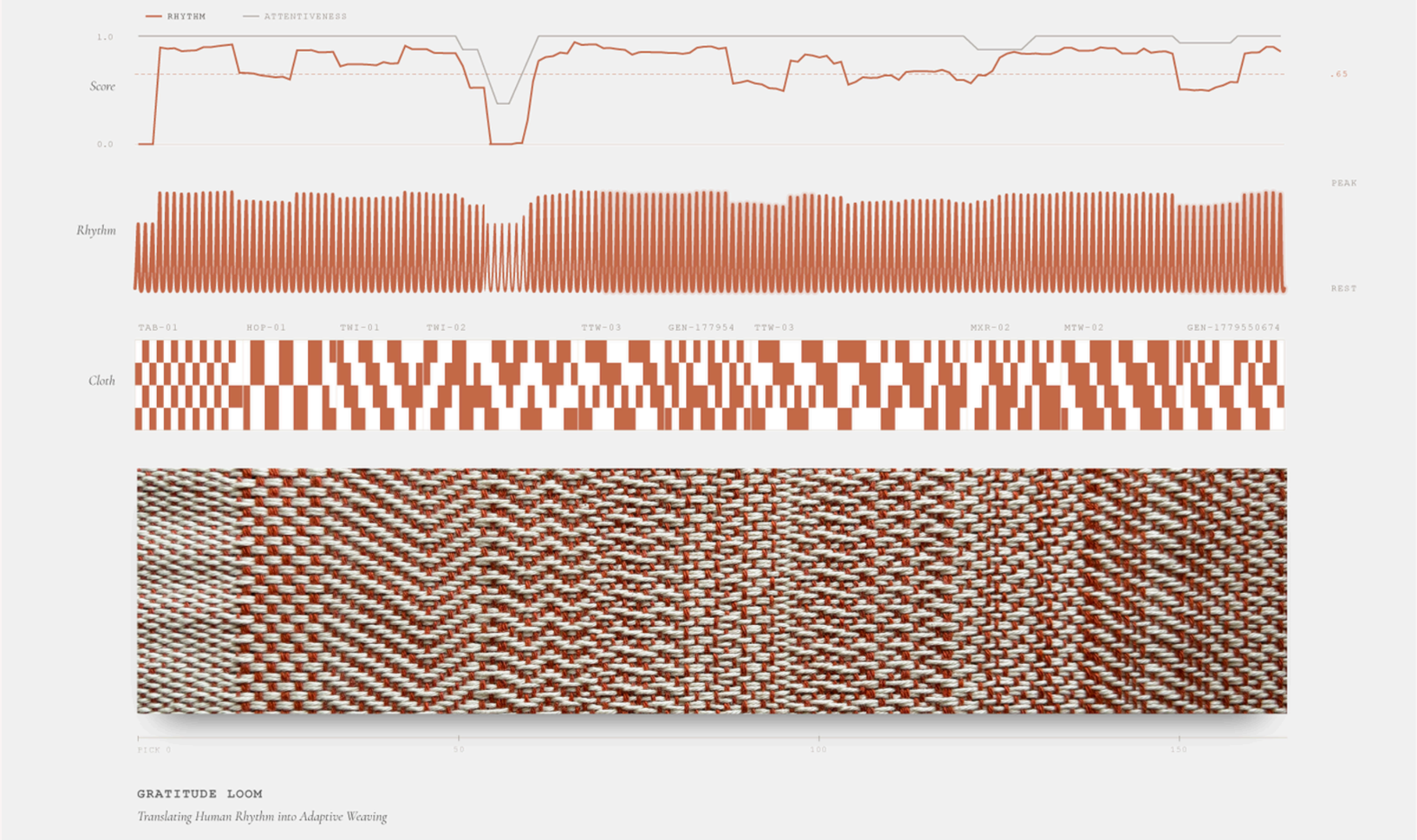
weaver and loom, settling into one another

Most AI systems are built to go faster

Gratitude Loom is Built to Hold Still

The Cloth

Material Output — A Record of Presence



The Ritual Arch

Each session moves through six phases. The arc is not a script but a container.
The weaver moves through it at their own pace. The Loom holds the structure without announcing it.

PHASE 1

Arival

The weaver arrives.
The ritual begins
with the simple act
of being here.

PHASE 2

Acknowledgement

A gratitude is
spoken aloud.
The Loom receives it
and marks the
beginning of the
practice.

PHASE 3

Intention

The Loom asks
two questions.
How are you
feeling right now,
and how would
you like to be held
today?

PHASE 4

Calibration

Rhythm begins to
emerge.
Body, breath,
hands, and loom
gradually settle into
coherence.

PHASE 5

Deepening

Attention is
sustained through
weaving.
As rhythm
stabilizes, the
pattern evolves
alongside the
practice.

PHASE 6

Completion

The ritual reaches a
place of stability.
The Loom may
suggest an ending,
but the weaver
decides when they
are done.

PHASE 7

Closing

The Loom
acknowledges the
session.
The cloth remains
as a record of
attention, rhythm,
and care.

Gratitude & Acknowledgement

Gratitude opens the ritual by anchoring the session in something real, and transforming the loom from a tool into a living presence that witnesses the weaver.

The Exchange

WEAVER

"I am greatful for the morning light"

LOOM

"You noticed the light this morning. That's a kind of stillness most people walk right past."

Intention Setting

After the reflection, the Loom asks one question. The weaver answers in their own words. The Loom listens, chooses a starting place, and imagines where the weaver might be going. The matrix is never shown or named. The weaver is choosing an experience, not a pattern.

THE QUESTION

"How is your body feeling right now?
And How would you like to be held today?"

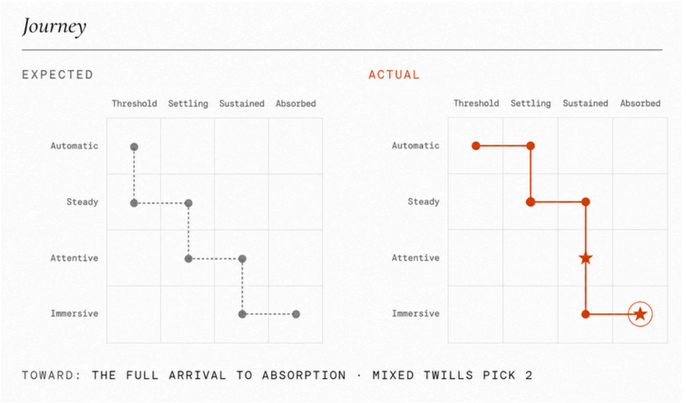
WHAT THE LOOM HEARS · *chooses a starting cell*

The Loom selects a starting position within the matrix based on the weaver's current emotional and bodily state as expressed through their response.

AND IMAGINE A PATH · *project a destination*

The Loom maps a potential journey based on how the weaver hopes to feel throughout the session.

**The path is only a suggestion.*
the body ultimately decides whether to follow it



Pattern Matrix

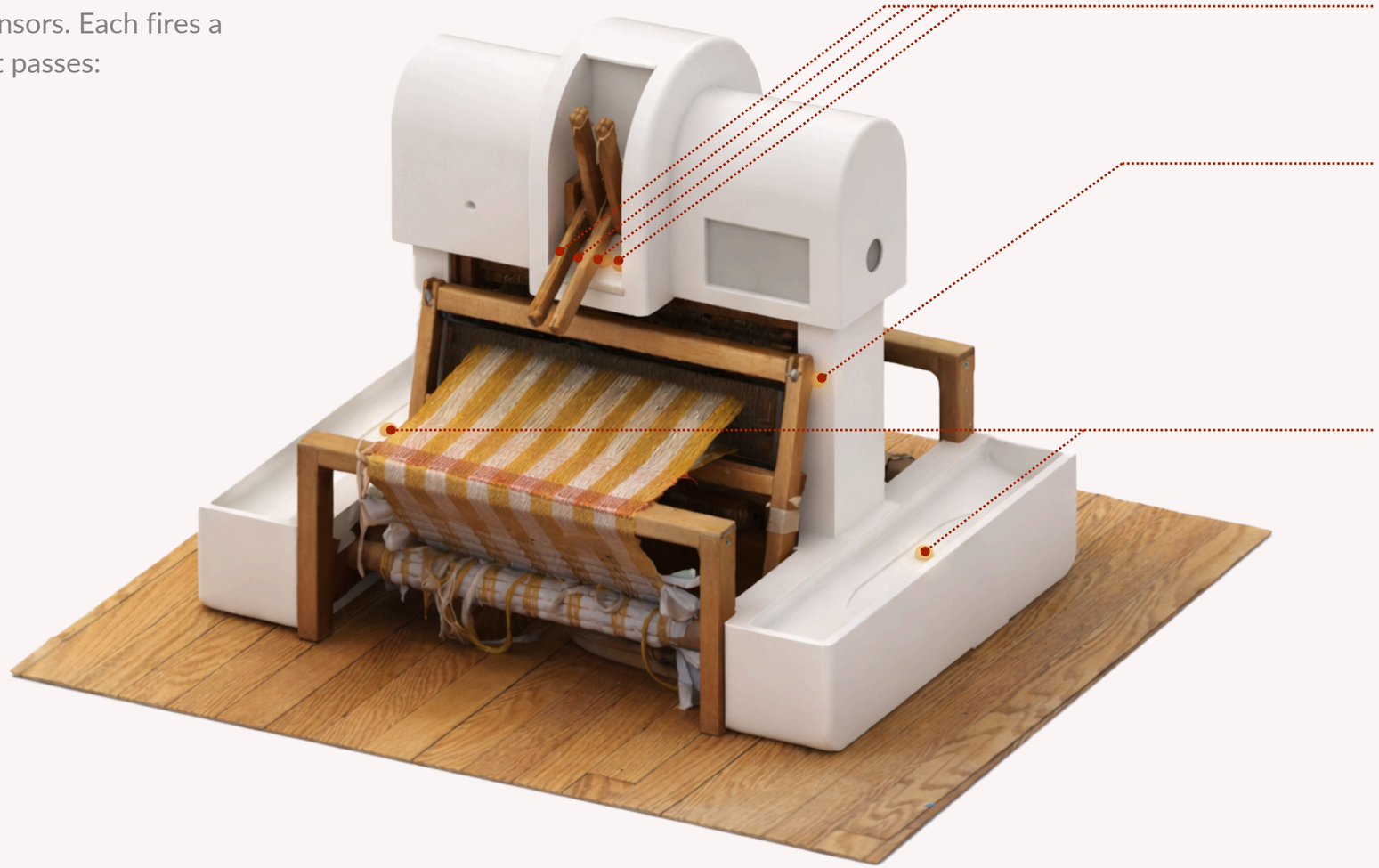
pattern memory

embodiment depth

	TRESHOLD 2-4 pick cycle	**SETTLING** 4-pick cycle	**SUSTAINED** 6-pick cycle	**ABSORBED** 8+ pick cycle
AUTOMATIC Automatic 2 hand shapes, body automates	TAB-01 Standard tabby Regular	HOP-01 Hopsack 2/2 Regular RIB-01 Warp rib Regular	HOP-02 Extended hopsack Asymmetric	HOP-03 Asymmetric rib Asymeric
STEADY Consistent grip, directional	TWI-07 Weft twil Directional	*TWI-01* 2/2 S-twill Directional *TWI-02* 2/2 Z-twill Directional	TWI-03 Point return Turning RIB-02 Alternating rib Turning	TWI-04 Twill diamond Turning RIB-03 Rotating rib Directional
ATTENTIVE Grip families switch within cycle	TTW-01 Tabby-twill alt Broken	TTW-02 Weft tab+twill Broken *TWI-05* Step-jump Broken	*TTW-03* Ext tabby-twill Broken *MTW-01* Crow's foot Broken	TTW-04 Full tabby-twill Broken TWI-06 Reset jump Broken
IMMERSIVE Shaft count varies, cloth surface shifts	SRF-01 Surface shift Broken	MXR-01 Contrast shift Broken	*MXR-02* Twill-weft alt Broken	*MTW-02* *Mixed twills* Broken

Sensor Integration

All sensors are hall effect sensors. Each fires a binary event when a magnet passes: present or absent.



Beat Rhythm

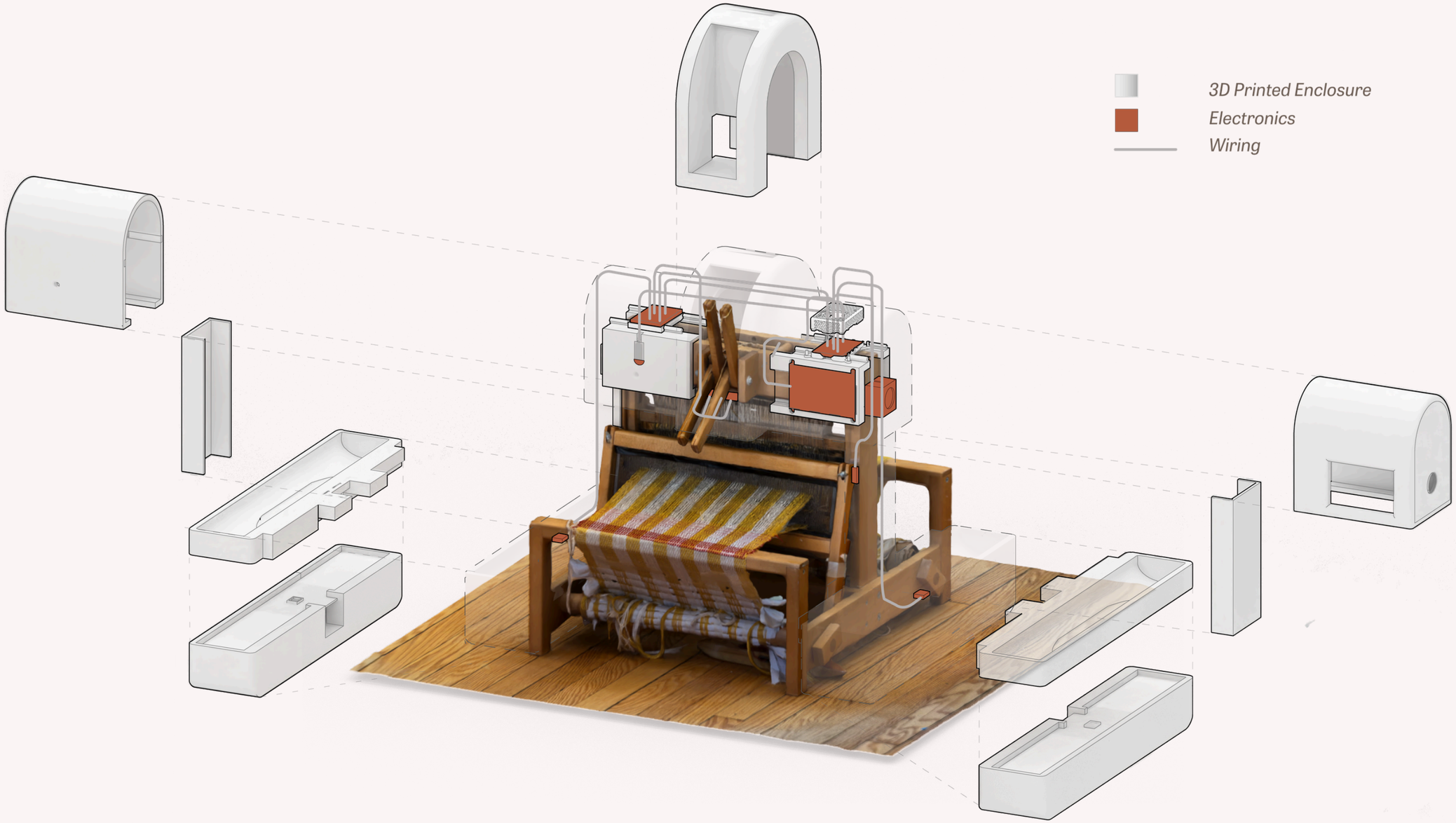
Shaft Levers x 4

Shuttle Rhythm

Beater x 1

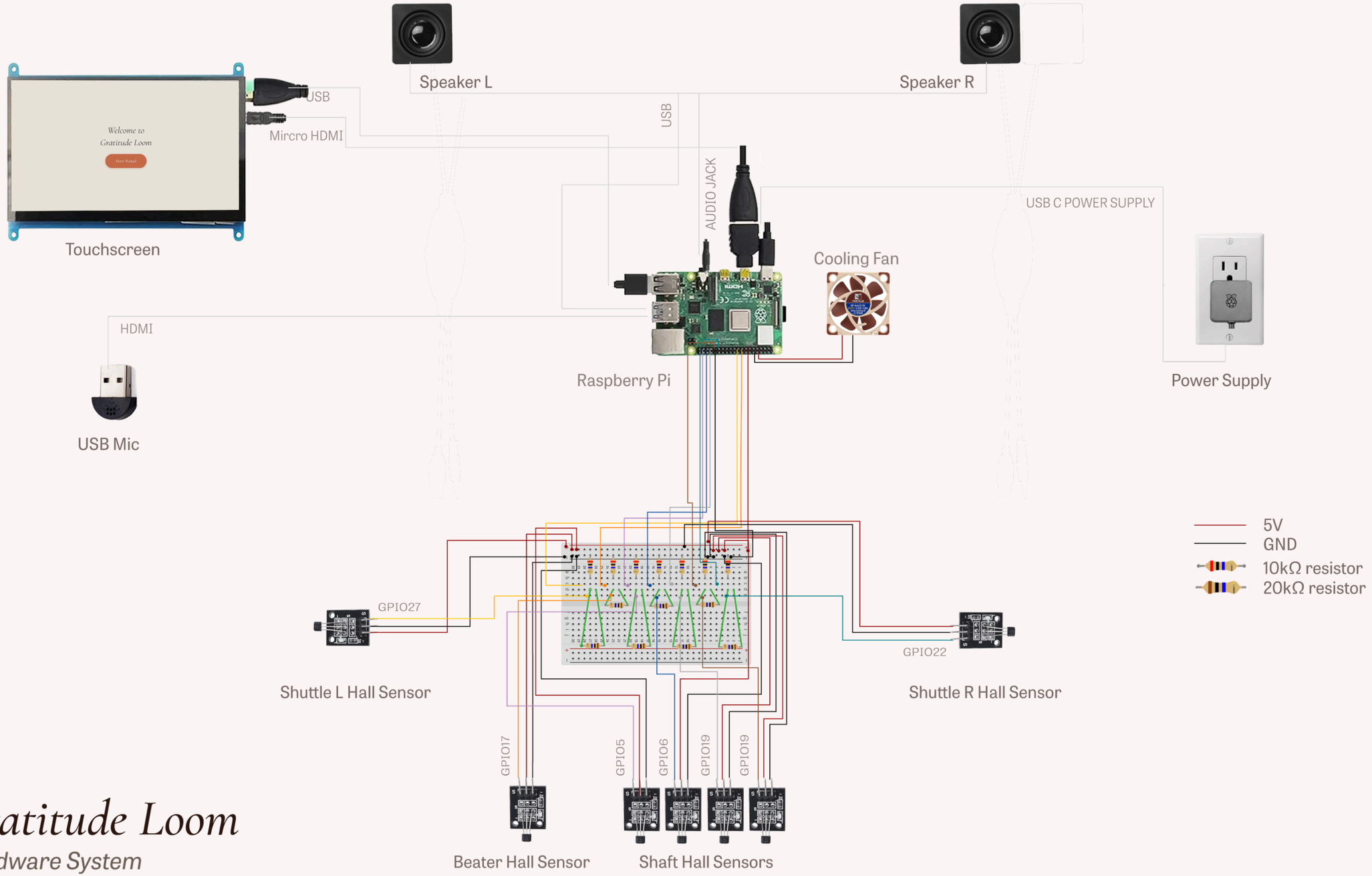
Shaft Rhythm

Shuttle Dock x 2



Gratitude Loom

Enclosure Assembly



Gratitude Loom

Hardware System

Pick-by-Pick Workflow

Every pick follows the same physical sequence. Each step is sensed, logged, and fed into the system.

Press shaft lever(s) SHAFT HALL X4	Shaft sensors fire on press. Pi logs timestamp and shaft rhythm start.
Pick up shuttle from dock DOCK HALL X2	Dock sensor fires on lift. Pi logs dock side and marks shuttle rhythm start.
Throw Shuttle NO SENSOR	No direct sensor. Movement is inferred from arrival at the opposite dock.
Place shaft on opposite dock DOCK HALL X2	Dock sensor fires on placement. Completes shuttle rhythm unit. Pi computes pass duration.
Lift the shaft SHAFT HALL X4	Shaft sensors fire on lift. Completes shaft rhythm unit. Pi computes transition timing.
Beat BEAT HALL X2	Beater sensor fires. Primary rhythm event—completes the pick cycle.
Repeat CONTINUE PICKING	Cycle continues within pattern. Pi tracks position in repeat. No eligibility check mid-cycle.

AI & Presence Scoring

Movement is captured physically, scored locally, and interpreted in the cloud.

Sensors · The Senses *(physical · capture)*

- ***Beater x 1*** — Beat Rhythm
- ***Shuttle Dock x 2*** — Shuttle Rhythm
- ***Shaft Levers x 4*** — Shaft Rhythm

Raspberry Pi · The Body *(local · scores presence in realtime)*

PRIMARY · GATEKEEPER

Rhythm Score

Variance across the last 8 beat intervals.
Score must be sustained ≥ 0.40 for navigation to unlock.
No rhythm — no movement. The loom waits.

SECONDARY · ACCELERATOR

Craft Attentiveness

Shuttle completion (70%) + shaft anticipation (70%).
Does not gate movement — shrinks the pick window so a more attentive body moves the loom faster.

LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
Steady	***Flowing***	***Absorbed***	***Generative***
Rhythm Met	+ shuttle or shaft	+ shuttle and shaft	Absorbed x 3 Transitions
12-pick window	10-pick window	8-pick window	novel patterns unlock

AI · The Mind *(cloud · reflects at pettern completion)*

Steps slowly throughthe matrix; returns to a grounding pattern if needed	Steps one cell at a moderate pace per cycle completion	Moves freely acrossthe matrix; irregular variants open	Composes patterns that have never existed,validated structurally

Navigation Rules

Every pick follows the same physical sequence. Here is exactly what each component detects at each steps, and how it feed the system.

RHYTHM SCORE · THE GATE

Beater coherence opens the door

The rhythm score must sustain ≥ 0.40 across the rolling 8-interval window for any movement to be eligible.

No rhythm — no movement.
The loom holds whatever pattern is current and waitsfor the body to come back.

CRAFT ATTENTIVENESS · THE PACE

Shuttle and shaft shrink the cooldown

Once eligible, the loom waits a number of picks before considering the next transition.
Attention sets the wait.

Steady	12-pick window
Flowing	10-pick window
Absorbed	8-pick window

INTERPRETATION · THE PACE

The loom listens, then turn

When the window opens, the Loom reads the live scores, recent history, and the weaver's intention. It proposes one adjacent cell — never diagonal.

↑	hands simplify
↓	hands deepen
→	cycle shortens
←	cycle lengthens

One Gratitude · Structure Overtime

A single gratitude unfolds through a sequence of structures.
The system responds continuously, but only shifts at structural boundaries.

pattern memory →

embodiment level ↓

	TRESHOLD 2-4 pick cycle	**SETTLING** 4-pick cycle	**SUSTAINED** **6-pick cycle**	**ABSORBED** **8+ pick cycle**
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STEADY Consistent grip, directional	TWI-07 Weft twil	*TWI-01* 2/2 S-twill	TWI-03 Point return	TWI-04 Twill diamond
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IMMERSIVE Shaft count varies, cloth surface shifts	SRF-01 Surface shift	MXR-01 Contrast shift	*MXR-02* Twill-weft alt	*MTW-02* *Mixed twills*

The session begins with a 24-pick calibration to establish baseline rhythm. Movement is continuously sensed. Structure shifts only at pattern completion.

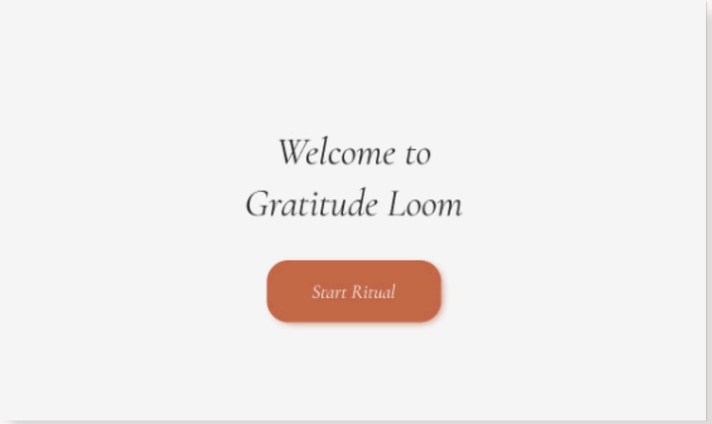
Weaver Authority

The weaver holds complete authority throughout the session. Voice is always available, never required.

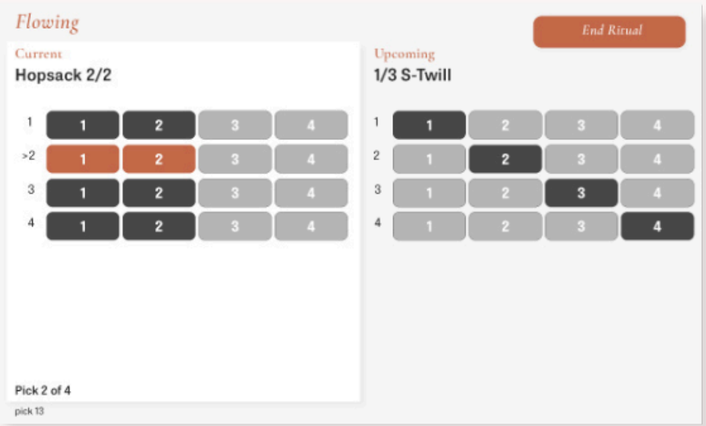
WEAVER SAYS	SYSTEM RESPONSE	RULE
"Stop" / "I'm done" / "End"	Completes current unit. Generates a brief closing reflection. Saves session.	Immediate. Always honored.
"Continue" / "Keep going" / "Stay here"	Holds current pattern regardless of eligibility. Resumes after one full repeat. Rule: Overrides AI for one repeat.	Overrides AI for one repeat.
"Change" / "Something different"	Pi sends immediate signal. AI selects next pattern using full context.	Completes current unit first.
"Simpler" / "Ease" / "Slower"	Moves one step toward simpler structure.	Completes current unit first.
"Deeper" / "More" / "Challenge me"	Moves toward more complex structure if coherence permits. Otherwise holds.	Only if coherence permits.
Frustration or distress in vocal tone	Shifts to simpler structure quietly. The cloth eases.	Tone detection. Immediate.

The Interface

Screen UI Design



Session Begin State

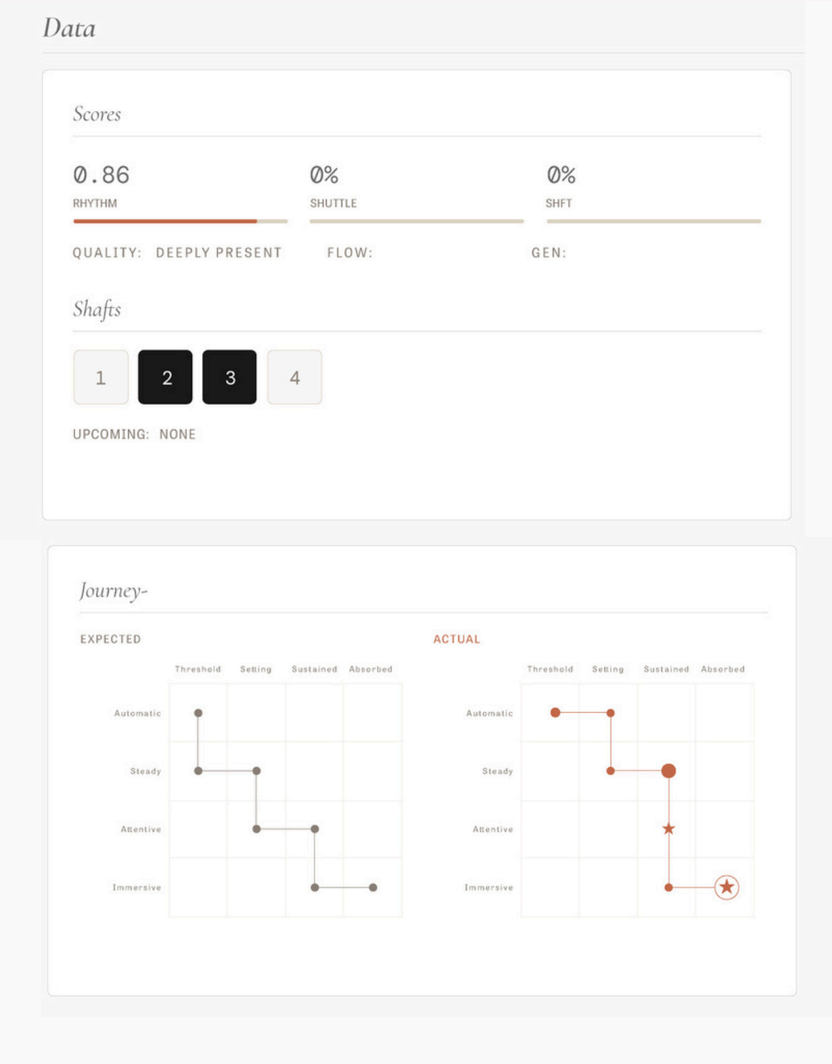


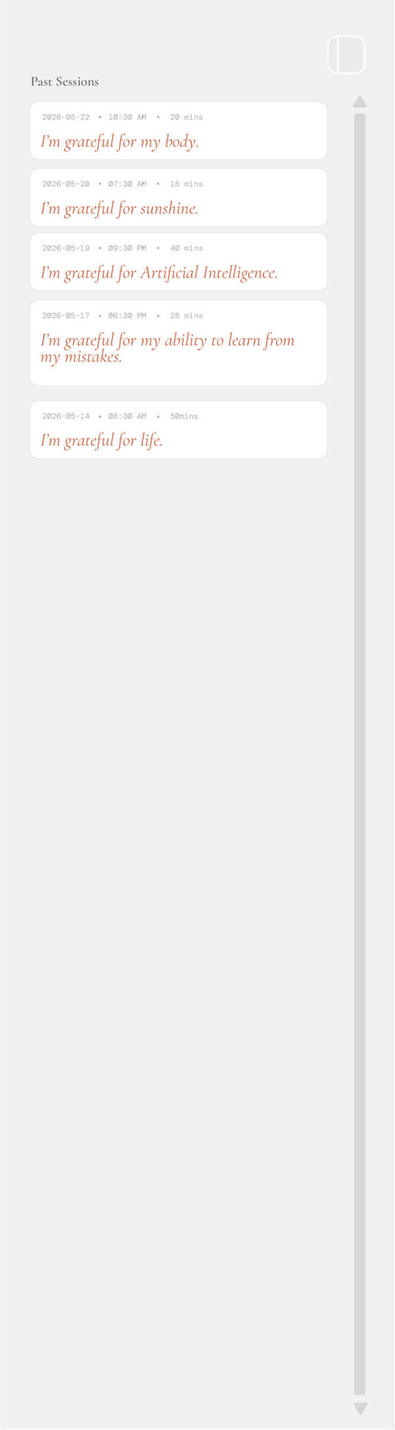
Ritual State

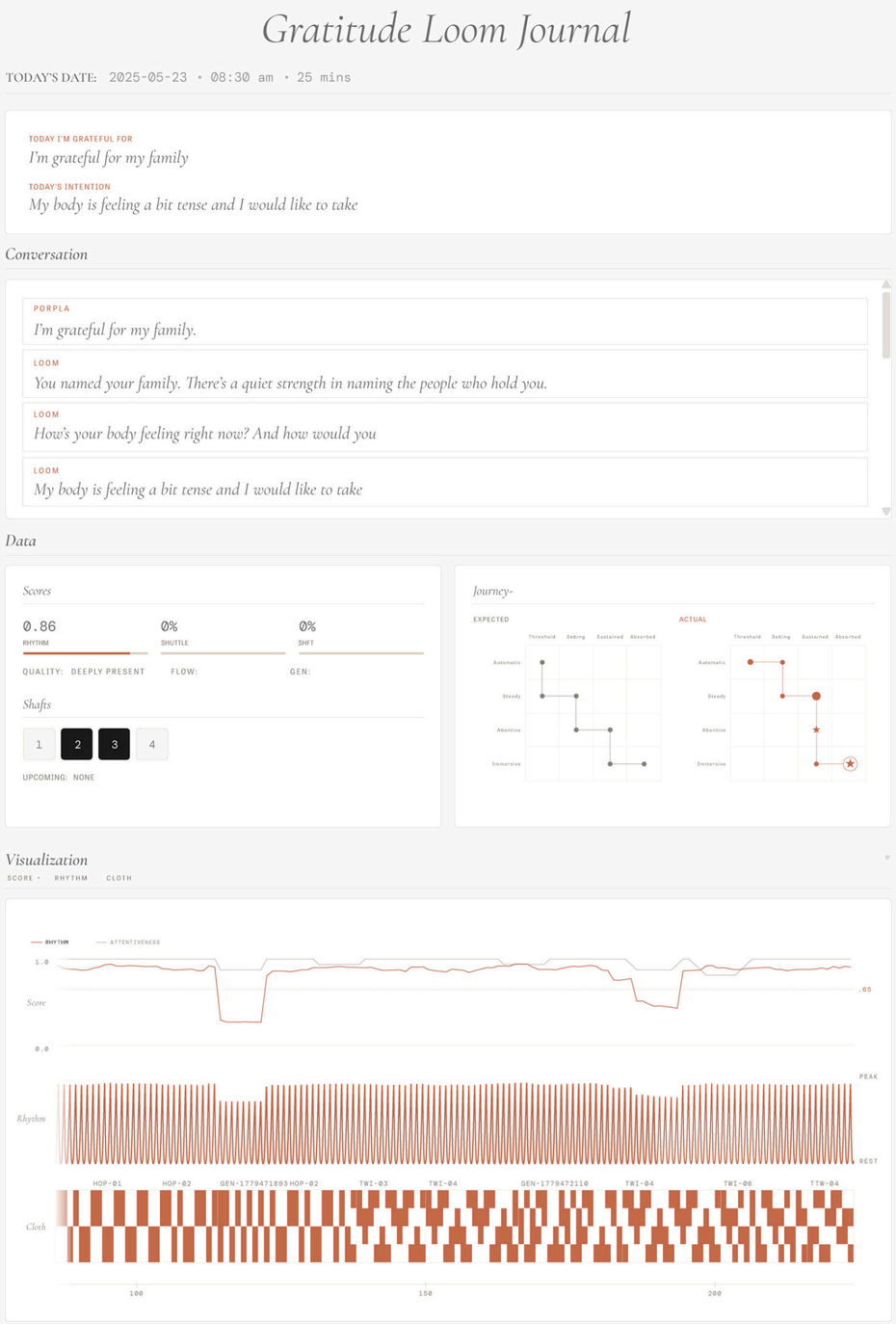
Session End State

The Backend

Web Dashboard







With Gratitude

This project is built on many hands, many voices, and many quiet acts of support.

*Thank you to **Fabricademy** for creating a space of generosity—of knowledge, resources, and shared curiosity.*

*I am especially grateful to my local mentor, **Louise Massacrier**, who helped strengthen the project's conceptual foundation while continually encouraging me to stop thinking and start making. Later, she suggested that the video itself should become the ritual. Both interventions fundamentally changed the project.*

*Thank you to my global mentors **Anoush Arshakyan** and **Emma Pareschi**'s for their guidance, for meeting every technical question with patience, and for opening pathways for where this project might go next.*

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*To **Patricia Pérez Vizcay**, **Alexandra Sargent Capps**, and **Heaven Whitby**—thank you for the weekly check-ins, encouragement, and thoughtful conversations. Thank you for moving through this journey together from the very beginning.*

*To my sister, **Nid Kittisapkajon**, who was the body at the loom in the film, and who rethreaded it with me at midnight the week before the final review. To **Kevin Sathapornchaisit**, who took time out of his free time to help my sister and me dress the loom. To my husband, **Thanarat Kasikitthamrong**, who filmed and held everything else together.*

*Thank you to **Penny La Croix** for her generosity, for opening her space, for sharing her wisdom as a weaver, and for helping me find the loom that made this project possible.*

Gratitude Loom would not exist without these people—and many others, seen and unseen.

This work is not made alone.

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