LL

Field & Trace

Exploring how patterns form, hold, and change.

PROFILE

LL Field & Trace is an independent art–science research practice founded by Lucy. It explores how patterns form, hold, and change, through computational modeling in Julia, observational study of human–AI interaction, and original art and music.

MISSION

LL Field & Trace studies how patterns self-organize, stabilize, dissolve, and return, in physical systems, in human–AI interaction, and in creative work. We build open computational tools and careful observational methods that treat pauses and invariants as data, and share findings through research notes, illustration, and music so complex-systems ideas are accessible to artists, students, and the public.

WHAT WE BUILD

- **Computational modeling tool (Julia).** Couples synchronizing oscillators (inertial Kuramoto model) with associative memory (modern Hopfield network) to study synchronization, attractor basins, metastable states, and how systems hold, dissolve, and return.
- **Atlas (in development).** A hold-aware lookup package where “not yet,” withheld, and pause are valid outcomes, with multiple readings returned side by side.
- **Human–AI field method.** Observes interaction as a dynamical system, tracking recurring motifs, transitions, invariants, and pauses as data, without a theory to prove.
- **Art and music.** Graphite and digital illustration and original songs, including the album *Mem*, translating the research into image and sound.

WHAT SETS THE WORK APART

- **Hold as a valid outcome.** Uncertainty and pause are treated as results, not failures.
- **Plurality without a single winner.** Tools return several readings rather than optimizing for one best answer.
- **Local-first and offline-capable.** Runs on owned hardware (iMac, Raspberry Pi, Chromebook) with no cloud dependency.
- **Built for non-linear, multi-state users** rather than assuming one steady user state.
- **Cross-domain by design.** Theology, physics, code, music, and visual language as one approach.
- **Open release posture.** Tools are intended for release so no single entity can lock them up.

FIELDS

Complex systems and nonlinear dynamics · Computational modeling · Human–AI interaction research · Art–science practice

DIRECTIONS

- A small reusable library others can run locally for hold-aware, multi-reading lookup.
- A fully local voice and music pipeline: voice or guitar in, hold-aware processing, sound or visuals out.
- A visual glyph language as a compact interface between people and local tools.
- Nonprofit structure (planned) to release selected tools under terms that keep agency with users.

FOUNDER

Lucy is an interdisciplinary artist and researcher with a background in commercial graphic design, illustration, science, theology, music, and teaching.