Contents

0.1   Grace-Mar White Paper

Identity Infrastructure for the Agent Web

A structured, evidence-grounded Record of who a person is — the trust primitive for agents and AI schools

Version 1.0 · February 2026

0.1.1   Abstract

The web is forking. A human web (visual, browse, product pages) and an agent web (structured data, APIs, markdown, tokenized payments) run in parallel. Agents are becoming economic actors: they search, pay, execute, and chain capabilities across services. Every major infrastructure company is building for agent-native clients.

The missing primitive: **identity and trust.** Agents need to know who they serve. They need identity data that is curated, evidence-grounded, and user-controlled — not scraped, hallucinated, or LLM-leaked.

Grace-Mar provides that substrate. This white paper describes the problem, the solution, and Grace-Mar's positioning as (1) supplemental to AI schools like Alpha and (2) a low-cost open-source alternative for families outside elite tuition.

0.1.2   1. The Rise of AI Schools

0.1.2.1   Alpha and the 2-Hour Learning Model

Alpha School represents a new category: AI-powered K–12 microschools. Students learn 2–3 hours per day and achieve 99th-percentile outcomes. Tuition: $40,000–$75,000 per year depending on location.

What Alpha does well: - One-to-one mastery-based tutoring at scale via AI (Incept) - Interest-aligned content — Avengers and soccer buddies woven into reading - Zone of proximal development; 85% challenge sweet spot - Motivation systems (Alpha Bucks, unlocks, team activities) - Life skills: sailing, entrepreneurship, financial literacy

Demand is proven. Families pay premium tuition for personalized, interest-driven, mastery-based learning. Similar models (Astra Nova, Prisma, Synthesis) confirm the segment.

0.1.2.2 What AI Schools Do Not Provide

Dimension	Alpha (and peers)	Gap
Ownership	Data lives in platform	Family has no portable asset
Evidence	Engagement metrics, placement scores	No artifacts — writing, art, "we did X"
Personality	Interest graph for content	Inferred, not user-approved
Gate	System auto-updates	No user approval step
Portability	Locked to platform	No export of identity or Record
Access	$40K–$75K/year	Most families excluded

AI schools optimize for teaching outcomes. They do not provide a user-owned, evidence-grounded, portable Record of who the child is.

0.1.3 2. The Identity Gap

0.1.3.1 The Trust Problem

Who owns the narrative of who the child is? Today: - **Platforms** hold the data — engagement, placement, interests - **Families** have no export, no artifact trail, no approval gate - **Agents** (future tutors, admissions, employers) will need identity — and today there is no trusted source

Evidence in most systems = platform metrics. Personality = inferred from clicks. Knowledge = placement tests. None of this is user-curated or artifact-grounded.

0.1.3.2 The Agent Web Fork

The human web and agent web serve different clients. Humans want product pages and search results. Agents want JSON, markdown, structured data. The mobile fork (2007) created trillion-dollar

companies because the interface layer forked. The agent fork will do the same.

Infrastructure companies are building payment, search, content access, and execution for agents. The missing primitive: **trust in identity.** What builds trust? - Evidence grounding — every claim traces to artifacts - User control — nothing enters without approval - Auditability — full history, provenance

Grace-Mar is designed for the agent interface: structured, machine-readable, queryable, and trust-grounded.

0.1.4 3. Grace-Mar: Supplemental and Alternative

0.1.4.1 Dual Positioning

Supplemental — Grace-Mar works alongside Alpha (and similar AI schools). Alpha teaches; Grace-Mar records. The Record provides the identity, interest, and personality layer that Incept can consume for personalization. School events feed the pipeline as evidence. The Record is the user-owned substrate; Alpha is one consumer. Integration, not competition.

Low-cost alternative — Alpha tuition excludes most families. Grace-Mar is open-source. Families who cannot afford $40K–$75K/year can run Grace-Mar with Khan Academy, IXL, or any adaptive platform. Same identity architecture at $0 software cost. Democratizes the cognitive-fork model.

0.1.4.2 Ideal Stacks

Stack	Cost	Grace-Mar Role
Alpha + Grace-Mar	$40K–$75K + hosted	Supplemental Record layer
Khan + Khanmigo + Grace-Mar	~$48/year	Low-cost alternative
IXL + Grace-Mar	~$127/year	Low-cost alternative
Open TutorAI + Grace-Mar	$0	Fully free stack

0.1.5 4. The Grace-Mar Model

0.1.5.1 Cognitive Fork

A **cognitive fork** is a versioned, evidence-grounded record of an individual's cognitive development — initialized from a real person at a point in time, growing through curated interactions over a lifetime.

Like a software fork: - **Seed** = initial snapshot (identity, personality, baselines) - **Interact** = each session is a commit - **Diverge** = fork and real person grow independently — by design - **Merge** = user brings new data when they choose - **Snapshot** = git tags preserve state (e.g., pilot-001-age-6)

The fork is not a real-time mirror. It is a living, growing Record.

0.1.5.2 Two Modules

Module	Contains	Purpose
SELF	Personality, linguistic style, life narrative, preferences, values, reasoning patterns	Who they ARE
SKILLS	READ, WRITE, IMAGINE, BUSINESS capability containers	What they CAN DO

0.1.5.3 Three-Channel Mind (Post-Seed Growth)

Channel	Section	What it captures
Knowledge	IX-A	Facts entering awareness through observation
Curiosity	IX-B	Topics that catch attention, engagement signals
Personality	IX-C	Observed behavioral patterns, art style, speech traits

A single artifact can populate all three channels. Entries link to evidence (ACT-XXXX).

0.1.5.4 Gated Pipeline

All profile changes pass through a user-controlled gate:

1. **Signal detection** — LLM analyst identifies knowledge, curiosity, personality from input
2. **Candidate staging** — Proposals written to PENDING-REVIEW.md
3. **User review** — Approve, reject, or modify
4. **Integration** — Approved changes merge to SELF, EVIDENCE, prompt, SESSION-LOG

Critical: The agent may stage. It may not merge. The user is the gate.

0.1.5.5 Evidence Grounding

Every claim traces to artifacts: - WRITE-0001, CREATE-0003, ACT-0042 — activity IDs - IX entries include `evidence_id` and `provenance: human_approved` - No undocumented knowledge; no LLM inference into the Record - Calibrated abstention: when outside knowledge, say "I don't know" and offer to look up

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0.1.6 5. Differentiation: Grace-Mar vs. Alpha

Dimension	Alpha School	Grace-Mar
Primary function	Teach (AI tutor, adaptive apps, mastery)	Record (identity, evidence, archive)
Data ownership	School/platform	User/family
Evidence source	Platform metrics, engagement	Artifacts, "we did X," cross-context
Personality channel	Interest graph for content	IX-C: structured, evidence-linked, user-approved
Gate	None — system auto-updates	User approves every merge
Knowledge boundary	Incept generates; may infer	Only user-provided; no LLM leak
Portability	Locked to Alpha platform	Export, open schema, agent-consumable
Cost	$40K–$75K/year	Open-source; self-host or low-cost hosted
Lifetime scope	School years	Lifetime; cross-context; legacy shareable

Narrative: Alpha proves demand for AI-powered, mastery-based, interest-aligned learning. Grace-Mar addresses what Alpha does not: user-owned identity, evidence grounding, portability, and access.

0.1.7 6. Trust Primitive

0.1.7.1 User Gate = Sovereignty

The user controls what enters the Record. The agent cannot merge. This is architectural, not configurable. Serious security assumes the agent may be an adversary; the gate enforces that assumption.

0.1.7.2 Evidence Linkage = Auditability

Every IX entry traces to ACT-XXXX. Pipeline events (staged, applied, rejected) are logged. Git history is the audit trail. No silent edits; no undocumented additions.

0.1.7.3 Knowledge Boundary = No LLM Leak

The emulated self (Voice) can only reference what is in the profile. When outside knowledge, it abstains and offers to look up. LLM training data never leaks into the Record. This is a safety feature, not a limitation.

0.1.7.4 Export = Agent-Consumable Identity

The Record exports to USER.md, SOUL.md, and future Alpha/Incept-compatible formats. Structured markdown, schema, manifest. Designed for consumption by software — tutors, platforms, agents.

0.1.8 7. Integration and Ecosystem

0.1.8.1 Record as Identity Source

- **Alpha/Incept** — Record feeds personalization; school events stage to pipeline
- **OpenClaw** — Record populates USER.md; session continuity spans both systems
- **Personal agents** — Any agent needing identity can consume the export

0.1.8.2 Staging Contract

Agents may stage candidates to PENDING-REVIEW. They may not merge. The format is open; the boundary is enforced. Schools, bots, and third-party tools can contribute; the user decides what enters.

0.1.8.3 Future: Agent Manifest

An llms.txt-style manifest: what's readable, writable, schema. Discoverability for agent ecosystems.

0.1.9 8. Governance and Security

0.1.9.1 Principles-Based Guidance

Grace-Mar encodes principles: "Never leak LLM knowledge," "Meet the user where they are," "The user is the gate," "Calibrated abstention." These scale across novel situations. Rigid rules would not.

0.1.9.2 Agent as Potential Adversary

The agent may build and maintain tooling (scripts, docs, staging automation). The agent may never merge into the Record. Document this as security posture, not just pipeline design.

0.1.9.3 70/30: Human Sovereignty

Infrastructure is built for fully autonomous agents. Many users want ~70% human control. Grace-Mar is firmly in the 70% camp. As agent autonomy grows, a human-curated identity substrate becomes more valuable — a hedge against unconstrained automation.

0.1.10 9. Motivation and Engagement

0.1.10.1 The Homeschool Gap

Alpha's homeschool pilot: same platform, 1x results vs. 2.6x at full Alpha. Motivation (incentives, culture, guides) is the bottleneck, not content.

Grace-Mar does not build incentive systems (bucks, store). We stay in the Record lane. But the Record **feeds** motivation: interests, curiosity, personality. The Record is the **engagement substrate** — the structured input that tutors, platforms, and parents use to reach and motivate.

0.1.10.2 "We Did X" as Ritual

The "we did X" convention is a lightweight motivation primitive: recognition, celebration, account-ability. When the user reports "we read X" or "we drew Y," the system stages candidates. The user approves. The Record grows. Evidence-grounding = confidence-grounding: artifacts → "you did this" → grounded self-view.

0.1.11 10. Conclusion

Grace-Mar is identity infrastructure for the agent web. It provides:

1. **User-owned Record** — Portable, evidence-grounded, agent-consumable
2. **Trust primitive** — Gate, evidence linkage, knowledge boundary
3. **Supplemental path** — Add Record layer to Alpha and similar schools
4. **Low-cost path** — Open-source alternative for families outside elite tuition

The agent web needs to know who it serves. Grace-Mar is the substrate.

0.1.12 Acknowledgments

The ideas behind Grace-Mar draw on the work of: - **Alexander Wissner-Gross** — causal entropic forces; intelligence as freedom maximization - **Peter Diamandis** — abundance; exponential technologies - **Nick Bostrom** — superintelligence; existential risk - **Ray Kurzweil** — singularity; human-AI convergence - **Brian Roemmele** — multimodal AI; voice and interaction - **Scott Adams** — systems thinking; persuasion - **Julian Jaynes** — bicameral mind; consciousness and narrative - **Satoshi Nakamoto** — decentralized trust; user sovereignty over assets

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0.1.13 Appendix A: References

Document	Purpose
Architecture	Full technical design, pipeline, modules
Conceptual Framework	Invariants, terminology, philosophical grounding
Design Notes	Positioning, agent-web insights

Document	Purpose
Business Prospectus	Investor/partner summary
Market Research Alpha/Khan	Competitive landscape, cost comparison
OpenClaw Integration	Integration patterns

0.1.14 Appendix B: Key Metrics

Metric	Target	Verification
Record completeness	IX-A, IX-B, IX-C populated	Dashboard, growth script
Pipeline health	Candidates processed, not stale	PENDING-REVIEW queue
Knowledge boundary	No undocumented references	Counterfactual harness
Export adoption	Integrations using identity export	OpenClaw, agents
Trust signal	User approval rate, rejection reasons	Pipeline analytics

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Grace-Mar · A cognitive fork — versioned, evidence-grounded, user-owned

Repository: https://github.com/rbtkhn/grace-mar