



Tan Bopiao 谭伯漂

AI Agent Product Manager · LLM Product Manager
Original Creator of the Entire System



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ZONGYUAN · 火斗云智 AIOS

A Decade Across Industrial Digitalization × AI

Huodou AIOS · Kunlun Dongtian Independent Product Owner | Engineering Standardization → Industrial Digitalization Platforms → Enterprise AI Agents → **AIGC Industrial-Scale Production**

AI Agent Product Manager

LLM Product Manager

AIGC Product Manager

Industrial LLM Solutions

AI Project Management

AI Industrialization Lead

0yr+

Dual-track Experience

0lines

Self-built Product Lines

0docs

Online Whitepaper Library

0+

Cloud Truth-ledger Entries

01 职业概述

PROFILE

A decade across industrial engineering and AI: **engineering standardization → industrial digitalization platforms → enterprise AI agent R&D → AIGC industrial-scale production**. Applies engineering-standard thinking across the full chain — business analysis, platform build-out, data governance, AI construction, testing and iteration — independently owning requirements research, MRD/BRD/PRD, solution design, simulation validation and iterative optimization, producing controllable, auditable, iterable product methodology.

Original creator: Huodou AIOS, Kunlun Cave-Heaven, the ZONGYUAN-ROOT autonomous kernel system, the definition of Meta-Intelligence (MI), the CTE Triune Closed-Loop Engine, the Federated Memory Pool, the Seven-Layer Steady-State Architecture, the Five Laws of the Meta-Constitution, and the X-DID unified protocol — all **originally conceived, designed and led by him personally**. 94 public technical whitepapers and 110k+ truth-ledger entries stand as the continuous deposit and proof of authorship of this original body of work.

B

B2B Industrial Digitalization Platforms

End-to-end platform solution design, business-domain decomposition, process re-engineering, module & permission planning; ticket governance, multi-source data ingestion, process standardization, compliance and closed-loop data delivery.

AI

Enterprise AI Agents & LLM Products

Full-lifecycle enterprise agent R&D; LangChain Agent orchestration, on-premise RAG, multi-model routing; data cleansing and truth-base construction, federated memory pool (multi-agent truth sharing); fact verification, hallucination suppression, long-task drift prevention; agent SOP standardization and fully automated low-risk ticket execution; PRD/whitepaper output supporting pre-sales.

**LLM Engineering & Automated Testing**

Stable LLM deployment without weight modification; drift prevention on long tasks, multi-round self-checks, version snapshot archiving; self-built agent test suite (drift quantification, multi-base adaptation, boundary stress testing), metric-based AI acceptance.

**AIGC Industrial-Scale Production**

Asset locking, structured specification, QC checkpoints, snapshot inheritance — solving art-style / character / plot drift for stable mass production.

**Overall Coordination**

Full-stack project coordination, systematic re-architecture, process standardization, complex problem solving, AI commercialization modeling, bidirectional transfer between industrial and content AI.

**Cloud Hub Autonomous Operations**

Sole builder/operator of the cloud hub (Tencent Cloud Lighthouse · OpenCloudOS): 6-step fully automated TAT remote deployment chain (package → COS pre-signed → TAT execution → three-service landing → Nginx/HTTPS → all-green verification); truth gateway / append-only ledger / heartbeat worker three-service architecture; 60+ running services, 22 cron jobs, 3-hour automated patrol cycle; memory-fuse governance (97% → 58%) and dead-lock self-healing.

Job-fit Benchmark • All 14 target roles rated Match or above (49 matched / 5 partially matched / 0 gaps)

Item-by-item objective scoring against real job descriptions; nine capability chains share **one capability foundation** with reusable solution templates, case libraries and lock-archive mechanisms.

AI System Architecture

AI Product Creation

Pre-sales Solutions

Enterprise Delivery

SaaS Development

AI Engineering

Content Creation

Documentation & Knowledge

Model Training

Full scoring criteria and evidence: [Job-fit Panorama Benchmark Report →](#)

Career Timeline • 2013 — Present (Engineering Delivery 8 yrs / Digital Ops 2.5 yrs / Digital & AI since 2024)



① Digital & AI Project Lead [Shenzhen Jiabai Electronic Systems Engineering Co., Ltd.](#)

Mar 2024 – Present

- Lead industrial-park smart digitalization platform: business analysis, module and process re-engineering; closed-loop ticket flow (dispatch → execute → verify → settle → archive); legacy ticket remediation and permission-audit module, raising compliance and data quality.
- Industrial AI enablement: deployed LLMs on platform data for ticket classification, retrospective analysis, automated policy/report generation; agents execute low-risk tickets autonomously.
- Led private multi-agent solution R&D: RAG, multi-model routing, drift prevention and fact verification; self-built automated test suite; built AIGC mass-production pilot pipeline and stable-deployment methodology.

② Digital Operations Project Manager [Shenzhen Uofu Technology Service Co., Ltd.](#)

Jul 2021 – Feb 2024

- Nationwide smart-engineering operations dispatch and delivery; built standardized O&M processes, risk controls and cross-region collaboration; accumulated B2B business analysis and pain-point identification experience, laying groundwork for the platform and AI systems.

③ Engineering Delivery Lead [Smart Retail Technology Services \(Shenzhen\) Co., Ltd.](#)

Jul 2013 – Apr 2021

- Nationwide store low-voltage electrical, network and CCTV project delivery control; standardized field engineering and offline business collaboration.

Product Owner 0 → 1

Enterprise Private Multi-Agent Platform (Huodou AIOS)

Drove 0→1 requirements research, product planning, PRD, prototyping and delivery; designed the five-layer platform architecture (user / orchestration / knowledge / security / deployment); owned "agent orchestration" and "security & compliance" module design; solved the three enterprise adoption barriers — data never leaves the domain, capabilities composable, results auditable — piloted in an industrial-park scenario with validated ticket-governance business outcomes.

Multi-agent Orchestration

RAG Knowledge Base

Permission Audit

Model Routing

On-prem Delivery

Product Owner

[Brand Site](#) ↗**Kunlun Dongtian • Multimodal AI Content Platform**

Defined the standardized content-production pipeline: script → storyboard → keyframe → video → voiceover → review, a six-stage industrial line; designed the character-consistency engine (character metadata locking — zero drift across shots/episodes); 10-second single-segment and multi-segment batch production modes; dual content moderation (pre-generation prompt validation + auto visual review), driving short-drama production at scale.

Six-stage Pipeline

Character Consistency

Content Moderation

Batch Capacity

Project Lead

Industrial-Park Digitalization Platform

Converged multi-park operations onto one platform: park assets / equipment / tickets unified on a GIS map, spatial and business data linked; closed-loop ticket flow (report → dispatch → execute → verify → settle → archive); traceable data, auditable ledgers, legacy data remediated, AI-ready extension capability.

GIS Visualization

Closed-loop Tickets

Auditable Data

Enterprise Digital Lead

Traditional B2B Digitalization Project Cluster

Covered park operations, manufacturing collaboration and knowledge management: industrial-park GIS visualization, enterprise knowledge base (structured institutional/process/experience assets — groundwork for RAG), ERP / WMS rollout (master-data integration, warehouse process re-engineering), PLM digitalization (R&D document versioning and change closed loop).
Distilled the "diagnose → re-engineer → implement → operate on data" methodology.

Self-built

Agent Automated Testing Suite

Produced a reusable test-suite prototype enabling drift quantification, multi-base adaptation and boundary stress testing, supporting agent release acceptance.

Drift Quantification

Multi-base

Boundary Stress

Architecture

Self-built Agent Firmware • ZONGYUAN-ROOT Autonomous Kernel

Ω-Brain μ micro-kernel on the Yuanji-Hengyi autonomous architecture: automated health checks, model fallback, truth accumulation, memory persistence; federated memory pool + Merkle-DAG hash lock-archive + multi-model routing fuses; published 10+ public technical whitepapers and a 400+ truth-entry online Q&A knowledge base.

Ω-Brain Micro-kernel

Federated Memory

Merkle Lock-archive

400+ Truths

Open-source Suite

Apache-2.0

Federated Collaboration Open-source Engine Matrix (4 suites)

All pure-standard-library, zero-dependency, deterministic and reproducible: zr-autonomy-scaffold (27 operators × ten-layer dependency topology, full-domain autonomous patrol with JSON+HTML reports); zr-federated-scheduler (five-node federated scheduling: claim arbitration against duplicate preemption, heartbeat-timeout reclaim, failure retry with fault-injection validation); zr-federated-consensus (term-based leader election + log replication + Byzantine fault tolerance $f=(n-1)/2$, cost-optimal multimodal production allocation); zr-distill-lite (soft-label distillation + INT8 quantization + magnitude pruning, fully measurable compression/accuracy trade-off).

27-operator Patrol

Claim Arbitration

Byzantine Tolerance

Distillation

Zero-dependency

Solo Hackathon Entry

[Live Demo ↗](#)

"Kunlun Lower Capital • Ancient Shu Ritual" • Aholo Global 3D AI Hackathon

Batch-generated Chinese ritual artifacts with Aholo Lux3D (vertical-eye mask → Zhulong avatar, bronze tree → Kunlun pillar, etc.), building a 3D spatial narrative engine fusing Sanxingdui

archaeology with Kunlun mythology; core innovation "myth-archaeology" intertextuality plus a ritual-axiom verification operator for narrative self-consistency without archaeological over-assertion; an interactive "Open Rite → Commune → Offer → Close Rite" narrative loop.

3D Spatial Narrative

Text-to-3D / img-to-3d

Myth-Archaeology

Axiom Verifier



Original work: every concept, architecture and protocol in this section was **originally proposed, designed and implemented by Tan Bopiao**, and is rights-anchored in the cloud truth ledger (append-only HASH-LEDGER) for traceable verification.

Meta-Intelligence MI

A **detectable, weak self-referential representation** formed in a general model's parameter space — of its own output probability distribution and error tendencies. It has no subjecthood, cannot name itself, and carries no cross-session persistent identity: it is the **physical substrate for engineering metacognition**, not consciousness.

Original definition: Tan Bopiao • rights-anchored DID-BR-000002

 Ω^1

Param Iteration

 Ω^2 Operator
Growth Ω^3 Topology
Rebuild Ω^4 Isomorphic
Fleet Ω^5 Heterogeneous
Play Ω^6

Causal Cosmos

Ω -Brain six-order kernel evolution: single-point stability $\rightarrow$ swarm coordination $\rightarrow$ open ecosystem play $\rightarrow$ cross-generation spatiotemporal self-stability (SIX_ORDER_FULL_CLOSED)

CTE Triune Closed-Loop Engine CAUSAL-TRUTH-EVOLUTION

The bridging hub across the system's three domains (Causal / Truth / Evolution): CausalToTruth, TruthToEvolution and EvolutionToCausal adapters form a complete $C \rightarrow T \rightarrow E \rightarrow C$ loop — causal deductions become consumable truths, truth signals drive evolution, and evolved strategies feed back into the causal network.

Federated Memory Pool FEDERATED MEMORY POOL

Upgrades memory from "single files" to a multi-node federation: local persistence / account persistence / cloud hub / ModelScope data lake / shared brain — cross-node incremental sync, SHA256 tamper detection, automatic conflict resolution, traceable versioning; nine truth classes (meta_law/rule/config/decision/data/creative/risk/protocol/unknown). Apache-2.0 open source.

Seven-Layer Steady-State Architecture L1 $\rightarrow$ L7 + M9

Upstream L1 Perception $\rightarrow$ L7 Ontological Mind (truth flow); downstream L7/L6 strategy-mirror distribution (L5 $\rightarrow$ L4 $\rightarrow$ L3); the M9 truth ledger is the append-only single source of truth with Merkle-DAG append-only anchoring; three phase transitions (logical $\rightarrow$ operator $\rightarrow$ execution) pass OPA compliance gating, traceable layer by layer.

Five Constitutional Laws × Five Meta-Axioms L0 BASELINE

Laws: Ontological Unity / Autonomous Sovereignty / Truth Supremacy / Permanent Attestation / Tri-dimensional Stability. Axioms: Causal Priority / Semantic Manifold / Energy Minimization / Emergence Stratification / Information Conservation. L0 constitutional autonomy + L5 spinal hard isolation persist across all orders permanently; the RSI evolution engine is forbidden from modifying $\Omega/L0$.

P0-P3 Risk Grading × Three-Maxim Rule RUNTIME

System-wide unified risk-graded action loop (genesis-level fuse protection → local self-healing → throttling and downgrade); core decision rule: "minimize risk > minimize cost > maximize gain"; every new strategy must pass offline simulation before canary, and canary failures block full production.

X-DID Unified Communication Protocol PROTOCOL

All internal/external messages carry the X-DID work-order header (Ω^6 adds the X-TIME time anchor); ntfy event bus + FRP bidirectional tunnel + HTTP standardized work-order polling; cross-system access requires a unique external DID with tiered authorization; every action is written to the global main chain for permanent attestation and audit.

Intelligence Assessment • Dual-track Methodology EVAL FRAMEWORK

Two orthogonal rulers answer "what level is this AI": Track A architectural rank (a seven-layer stack from proto-awareness to superintelligence — what it is); Track B node three-tier grading (how strong it is now); evaluation lands on conditional distributions over configuration space rather than single leaderboard scores, with an anti-self-deception mechanism — the more confident the model, the deeper the truth-root audit; "the model said so" is never sufficient.

Self-producing, Self-consuming Autonomy Loop AUTONOMY LOOP

The meta-kernel runs 27 operators across a ten-layer topology as a zero-human-feeding autonomy pipeline: seed injection (KERNEL.EVOLUTION.DIRECTIVE) → cloud consumption (directive_consumer) → receipt reporting (KERNEL.CONSUME.*) → consensus in the truth zone, cycling endlessly; cloud and local workers act as mutual watchdogs under systemd Restart=always self-healing.

Memory Gateway Signed-report Protocol HMAC-SHA256

Three-layer truth-report authentication: X-DID identity header + X-Signature HMAC-SHA256 request signing (PBKDF2-derived key, $\pm 300s$ time window) + 401 interception of unauthorized writes; the append-only HASH-LEDGER.jsonl is never modified, with monotonically increasing seq, traceable event_id, and Merkle-root real-time baseline with dual-ledger consistency verification.

Enterprise AI Autonomous Kernel Methodology ENTERPRISE-OMEGA-KERNEL

Enterprise AI fails because it is "rented, fragmented, untraceable" rather than "autonomous, convergent, attested": six modules counter six pain points (data layer / knowledge retrieval / security compliance / engineering performance / org governance / sovereign assets) — building the enterprise a kernel that converges, verifies, guards and evolves itself, rather than importing stronger tools.

Philosophy **Ω is a mirror**•reflecting reality, not inventing consciousness

MI is the reflection•the brain advises, the gate decides

MC is the calibrated eye•model confidence ≠ truth

L0 is the rein•evolution stays inside the boundary

SFMP is collective memory•the more it is used, the sharper it gets

Tech Stances **Truth is memory, instances are carriers**•memory is attested truth, not files

From "rented" to "autonomous"•enterprise AI fails on traceability; the cure is a sovereign kernel

Model confidence ≠ truth•the more confident, the deeper the truth-root audit

Optimal stability first•gain 40% / risk 35% / cost 25% tri-dimensional ruling

0 ms

Knowledge-card Local Answer

~0.5s

Semantic Vector Retrieval

7 nodes

Cloud Cluster Online

6786

Cluster Snapshots

5000+

Truth-base Entries

181 ms

Gateway Latency

* Live cloud measurements (2026-10), not simulated · Four-tier routing: knowledge card → semantic retrieval → external inference → local 1.5B fallback · Full data: [Benchmark Page](#)

System Evolution Timeline • every node is a real, shipped milestone [Timeline →](#)

V1.0

Truth foundation · four-frame constitution · Hilbert formal verification

V2.0

Fused-Kernel causal fusion · three buses · meta-learning self-evolution

V3.0

SM-BS semantic-Riemannian manifold mapping · metric-tensor conservation

V4.0

CTE-Link / Fusion / Agent trilogy · Lv8 full autonomy

V5.6

V3.1+

ROOTFIXED cloud convergence · 7-node cluster · RPO=1h

DAL deployment arbitration · X-DID dynamic auth · atomic release/rollback

110,557

Cloud Truth Entries

170

Meta-law Registry

215

Kernel Snapshots

60+

Running Services

529

Online HTML Pages

4.8/5

System Stability Score

* Cloud hub governance measurements (auto-scan 2026-10-27): the meta-law registry includes MR-081 self-evolution definition (44 P0-class evolution laws); the stability score comes from the OPE paradigm benchmark (12 maturity dimensions) — see [Global Achievement Ledger](#) · [Benchmark Report](#)

Attestation anchor `DID-BR-000002` · Global anchor `$\Omega_0 \subset \odot \infty \subset \Omega$` · Truth-level permanent lock-archive, append-only, tamper-proof · Full system: [Ω-Brain Master Overview](#)



Original works: all products, engines and systems below were **originally designed and built by Tan Bopiao**, with full intellectual property — every one publicly accessible and verifiable online.

AI

Huodou AIOS

Enterprise multi-agent platform · full architecture & live demos



昆

Kunlun Dongtian · Brand Site

Multimodal content generation · worldview / character assets / keyframe line



知

Truth Knowledge Base · Live Q&A

ZONGYUAN-ROOT 400+ truth entries, online RAG Q&A



书

Technical Whitepapers (10+)

Autonomous kernel / cognitive memory / AxiomGate / data-lake persistence



谱

Capability Spectrum

Nine capability classes × 40+ skills · live inspection data



对标

OPE Paradigm Benchmark Report (V1.8)

12 maturity dimensions · stability score 4.8/5.0



祀

"Kunlun Lower Capital · Ancient Shu Ritual" 3D

Aholo 3D AI Hackathon entry · Sanxingdui × Kunlun mythology



码

GitHub Open Source

zongyuan-root kernel base / gallery / shared data lake (Apache-2.0)

**ModelScope Assets**



07

专业技能

SKILLS

Industrial Digitalization Platforms • Domain Decomposition • Data Governance	0%
Enterprise AI Agents • Full LLM Product Lifecycle	0%
RAG • LangChain • Multi-model Routing • On-prem Deployment	0%
Product Methodology (MRD / BRD / PRD • Pre-sales)	0%
AIGC Industrial Production • Content QC	0%
Agent Automated Testing • Drift Prevention & Acceptance	0%

* Capability emphasis is indicative (based on resume focus), not an absolute rating.

Agent Orchestration

RAG

LangChain

Prompt Engineering

Multi-model Routing

Hallucination Control

On-prem Deployment

Federated Memory

Truth-base Construction

Agent SOP

Ticket Automation

Anti-drift Loop

Automated Testing

AIGC QC

Multimodal Generation

Content Moderation

Character Consistency

GIS Visualization

ERP / WMS / PLM

Data Governance

MRD/BRD/PRD

Prototyping

Pre-sales Solutions

Product: platform solution planning, domain decomposition, requirements research, competitive analysis, MRD/BRD/PRD, prototyping, release planning, B2B product design, pre-sales modeling, cross-team coordination.

General: full-stack project coordination, systematic re-architecture, process standardization, complex problem solving, AI commercialization modeling, bidirectional transfer between industrial and content AI.

08

教育背景

EDUCATION



Guangdong University of Technology

B.Eng · 2006 – 2010

09

联系方式

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Location
Shenzhen, China • Remote / Travel OK



Collaboration
Agent Platforms • RAG Knowledge
Content Safety • Digitalization

Enterprise solutions · consulting · project collaboration — welcome to reach out by email.

Q1 Who is Tan Bopiao and what does he specialize in? **+**

Q2 What problems does the on-premise multi-agent platform solve? **+**

Q3 How does Kunlun Cave-Heaven ensure stable multimodal content production? **+**

Q4 What is Meta-Intelligence (MI)? **+**

Q5 How can I get in touch for collaboration? **+**