SENGINE AI

End-to-end spatial computing generation system

Team Background

The global team, supported by top Chinese and American professors

SENGINE AI

Liu Zidong
CEO

Doctor of AI Design, University of Austin (TOP 5)
Master of Computing Design at UCL (TOP 1)
Founder of AAE Architectural Self-encoding Research Group in the United States
(Gathering top scholars in this field in the United States, focusing on spatial mode coding and generation)
Nearly 10 AIGC papers have been accepted and published in the international top conference on space generation

Academician Jianmin Meng
Chief consultant

Academician of Chinese Academy of Engineering (the second local academician in Shenzhen)
Standing Committee member of Shenzhen Municipal Committee of the Chinese Peoples Political Consultative Conference
Vice President of China Architecture Society
Honorary Chairman of Shenzhen Architectural Design and Research Institute
Distinguished Professor, Shenzhen University

Professor Li Zexiang
Chief consultant

Robotics and automation expert
Professor, Department of Electronic and Computer Engineering, Hong Kong University of Science and Technology
Chairman of Gogitech
XbotPark, founder of Shenzhen Science and Technology Innovation College
Former Chairman of DJI

Professor Daniel Koehler
principal scientist

Professor of AI + Space Generation Interdisciplinary Field at UT Austin, USA
Top 10 experts in artificial intelligence 3D space generation
Founder of Lab Eds

Yang Mingzhuo
CTO

AIGC algorithm research and development expert, CS major, The Chinese University of Hong Kong
The paper was accepted by NeurIPS2023, a top machine learning conference
Former algorithm researcher at SenseTime

Li Yongyi
COO

Parametric system development expert
He has developed a parametric system for 350-meter super high-rise buildings
I have independently developed CAD commercial plug-in
Berlin design Grand Prix winner

Lin Ling
Head of 3D engine

3D engine development expert
Former head of 3D engine at Tencent Game Photon Studio
Former head of 3D engine at Perfect World (Shanghai)

Luo Jingyu
Head of product algorithm

AIGC algorithm research and development expert
Master of Design Science, University of Pennsylvania
Former ARI LAB algorithm researcher at the University of Pennsylvania

Source of talent

清华大学 Tsinghua University
UCL
Penn University of Pennsylvania
香港中文大學
Tencent 腾讯
商汤 sensetime
完美世界 PERFECT WORLD

Honor of the habitat

First prize in 2024 Huawei Cloud Developer Competition
2024 DEMO China, Future Star Award
In 2024, the first batch of enterprises selected for "Model Camp" in Shenzhen Artificial Intelligence Ecology Conference TOP2
TOP5 of the New Generation Artificial Intelligence (Shenzhen) Entrepreneurship Competition in 2023
Top 30 of the 2023 Black Horse AI Competition National Finals
Amazon Web Services-Cloud Creation Program award for the highest level of quota in 2023

Gross habitat contribution

- Liu Zidong, Li Han, Daniel Koehler, and Li Yan. "From Bubble Diagram to Floorplan Graph: Automatic Optimization of Graph Structure via Graph Neural Network (GNN)". eCAADe2023 paper published.
- Daniel Koehler, Liu Zidong. "Exploring Building Types and Their Socioeconomic Contexts: Composition Insight from Large-scale text-to-image Models" ACADIA2024 paper published.
- Su Xinyu, Liu Zidong, Yang Mingzhuo, Daniel Koehler. "ZoeLength: A framework for indoor measurement from a single interior image for the popularization of AI Interior Design" was published in eCAADe2024.
- Su Xinyu, Luo Jianhe, Liu Zidong. "Text to Terminal: A framework for generating airport terminal layout with large-scale language-image models" was published.

Spatial Modality Exceeds Above Homogeneous Competition

SENGINE AI

Traditional NLP/CV technologies suffer from severe homogenization,
while spatial modality presents novel opportunities

Text modality

Image/video modality

3D modality

Spatial modality

OpenAI

ChatGPT 3.5 released in 2022

Sora

SORA released in 2024

LUMA AI

Luma Genie released in 2023

World Labs

2024 Fei-Fei Li released World Labs

deepseek

DEEPSEEK released in 2025

豆包大模型

Doubao visual understanding model
released in 2024

TRIPO

Tripo released in 2023

SENGINE AI

2024 Spatial modality application
SENGINE V1.0 released

Extensive application scenarios

SENGINE AI

Game

Film

Live Streaming

Smart City

E-commerce

Embodiment

Home Furnishing

Home Decoration

VR/AR

Meta universe

SENGINE AI

Living space

Office space

Urban space

SENGINE AI

Why is the space like this?

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Spatial Modality: **Objects ORDER** defined by the Human activity
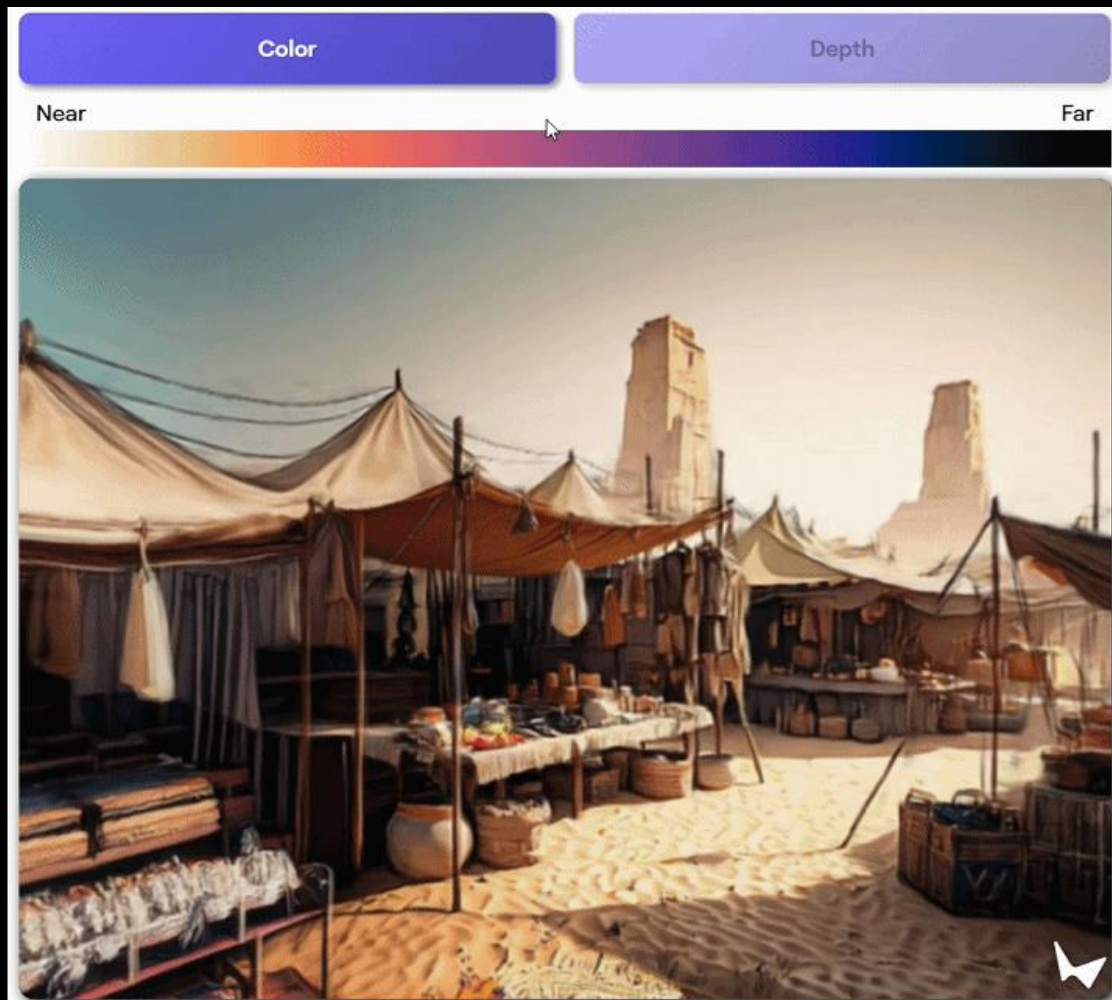
Not rendering engine   Not 3D Asset generation   Not physical simulation

Prior studies have limitations in spatial accuracy and data quality

Fei-Fei Li World Lab

- **There is only a sensory dimension, and no definition of a human behavior dimension**
- Mesh grid, non-interactive
- Conditions cannot be entered and cannot be guaranteed to be reasonable

General research based on mesh mode

NVIDIA/Princeton Infinigen

- Procedurally generated, purely within geometric mathematical dimensions.
- Random rules, lacking layout rationality.
- Poor robustness, prone to errors in complex environments.

Randomly generated based on mathematical rules

SENGINE AI

- Behavioral embedding —— activities, flow lines, interactions
- Sensory embedding —— color, depth, and layers
- Geometric embedding —— Ergonomics, physical scale, structure
- Emotional embedding —— light, sound, culture, emotion
- Vector data, realistic and reasonable, can be physically simulated
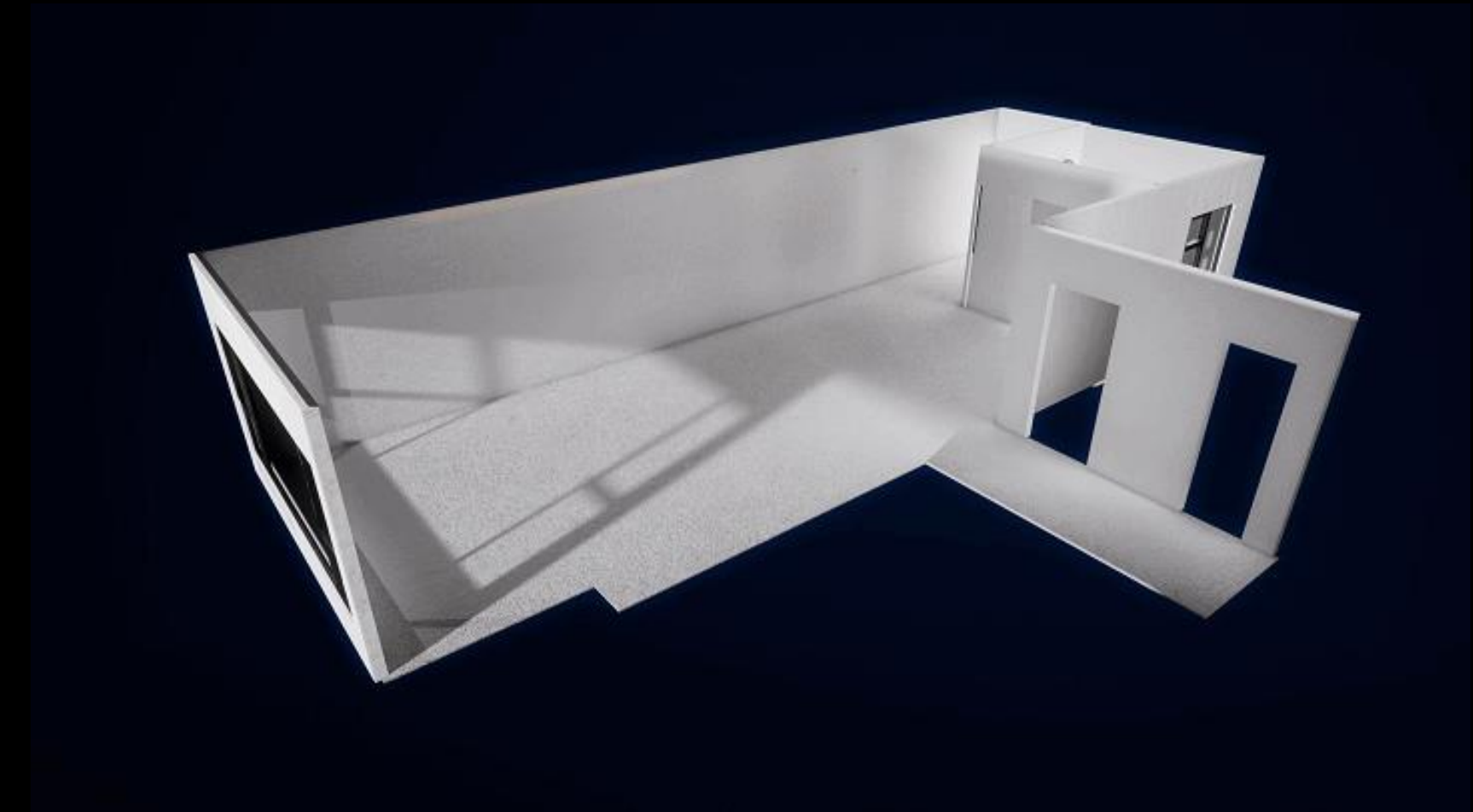
Original research based on human activities

The spatial modality dilemma

Spatial modalities expression difficulties

Spatial data absence
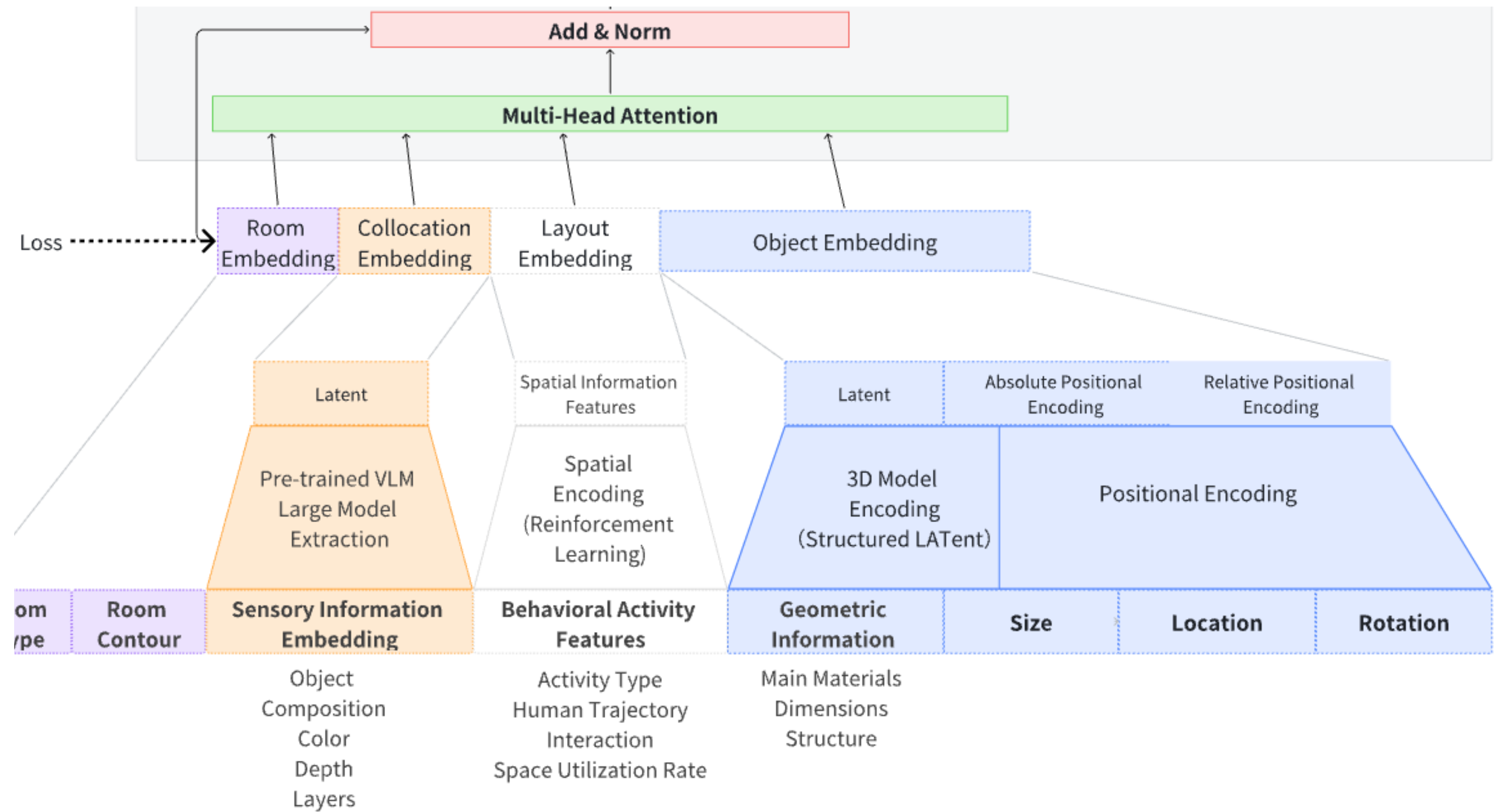
Spatial computing High complexity

▼

▼

▼
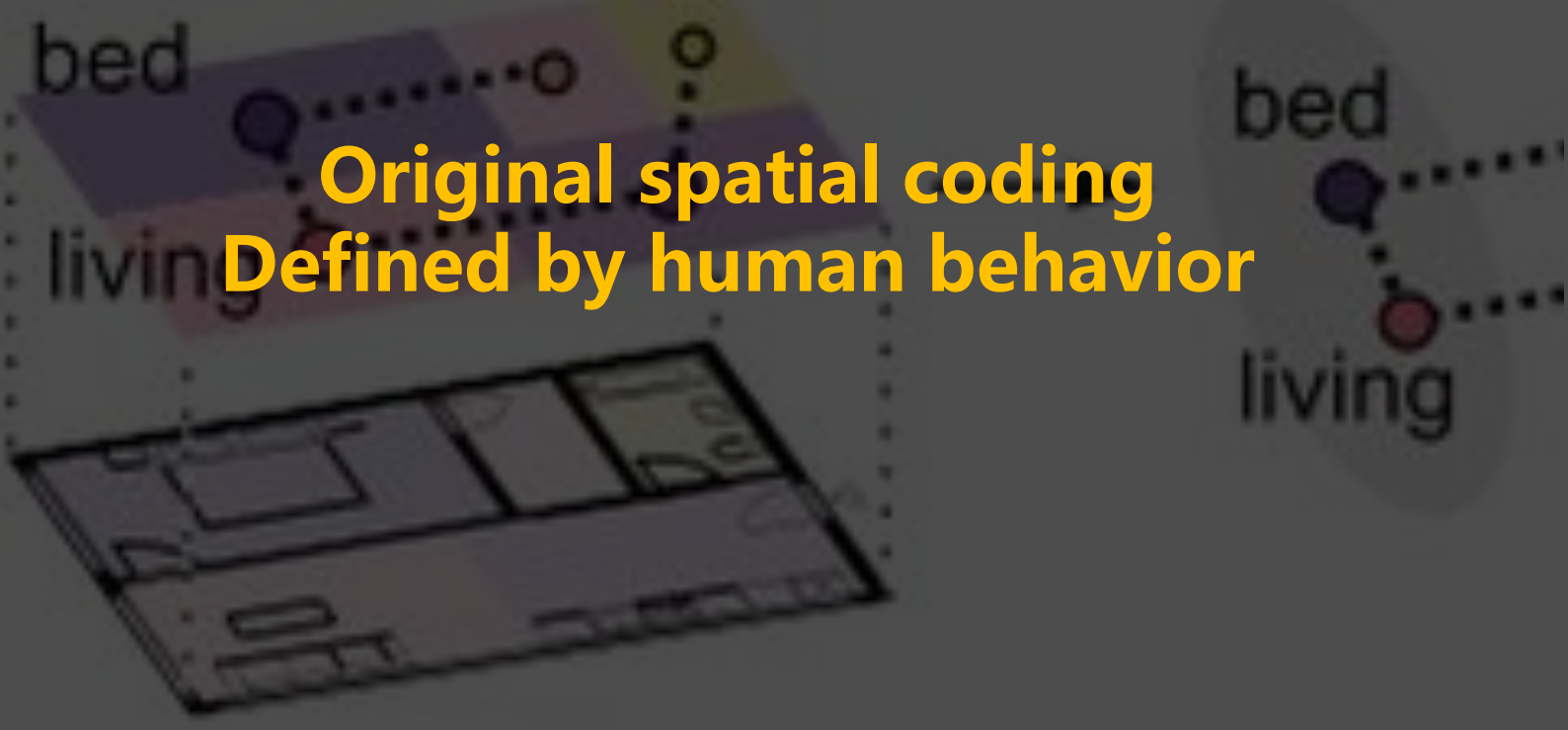
**Original spatial coding
Defined by human behavior**

**Multimodal alignment
Extract features from Multimodal**

The VLA multi-agent autoregressive framework reduces the computational complexity
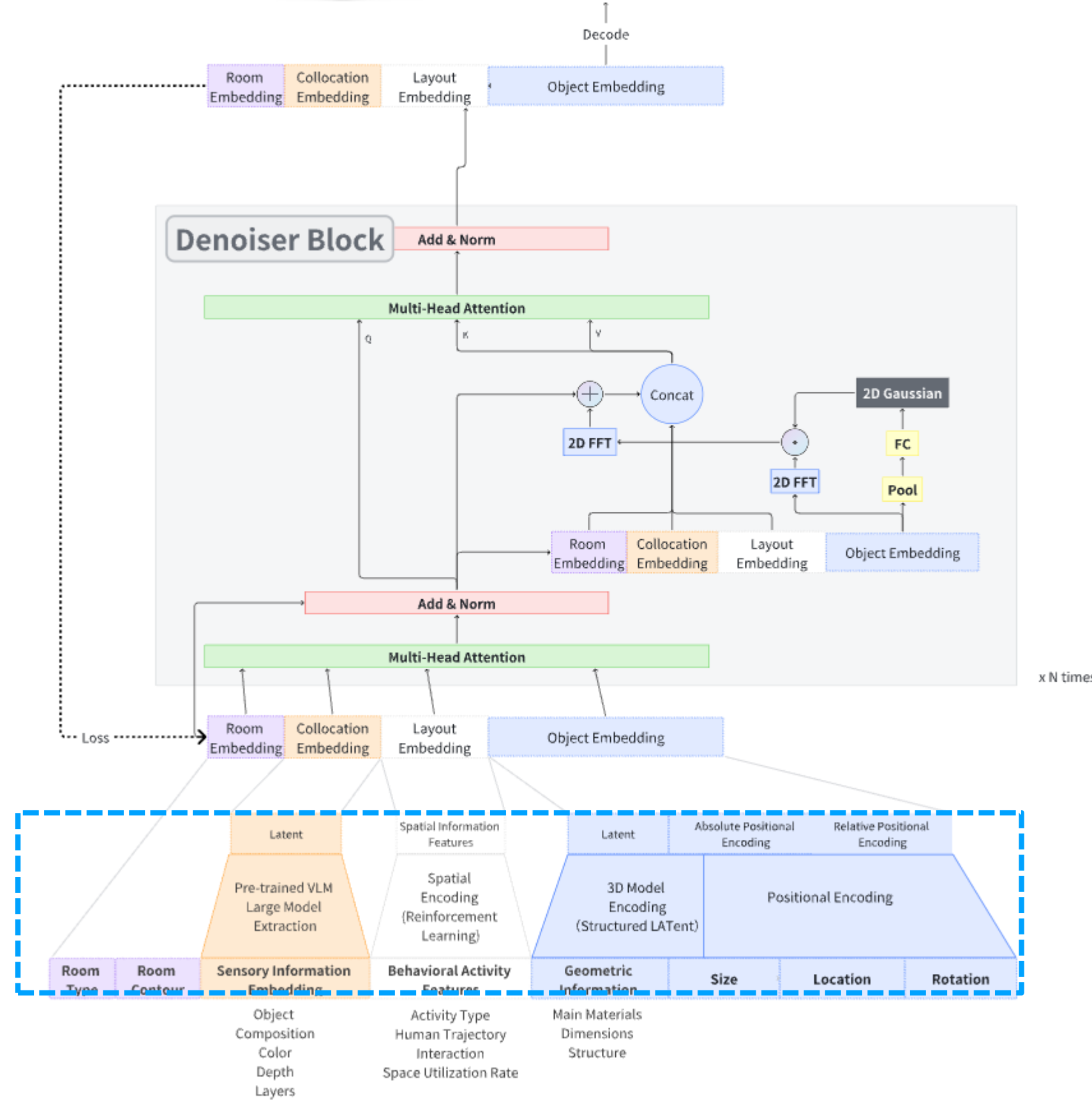
Vectorize hundreds of spatial features

1.1 Sengine Spatial encoding

Sengine AI is the worlds first company to conduct digital encoding and AI training research for spatial schemes. They have built a complete spatial scheme encoding format and self-supervised training system from scratch, covering multiple original aspects such as layout embedding, object pairing attention mechanisms, multi-modal data distillation, and agent reinforcement learning.

Pixel audio recording → 1-5GB/file .MP4 .AVI .WMV

Video AI encoding: Contents abstraction → #Anime #Sports #ACG #Meme ...... → Video & Character feature matching

Characteristics

1024-dimensional eigenvectors

Personalized content recommendations
#Child   #Gymgirl   #Sport

Geometry recording → 0.1-1G/file .SKP .MAX .DWG

Spatial AI encoding: Design elements abstraction → #Living alone #Cream style #Wood style #Shenzhen #Renovation exp #Popular style #Dopamine ...... → Space & Character feature matching

Characteristics

1024-dimensional eigenvectors

Personalized space recommendations
%Cozy   #Study   #E-sport
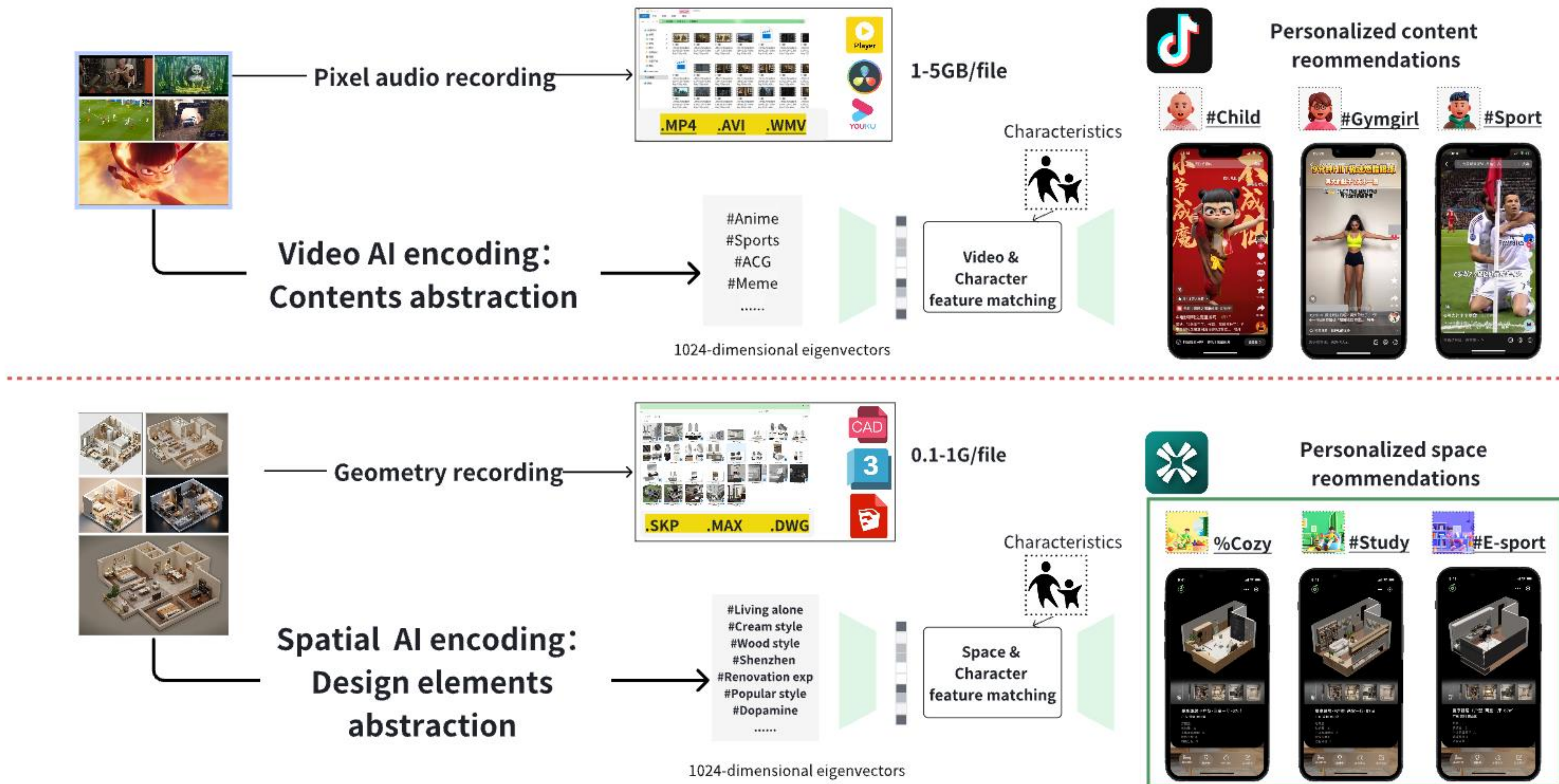
1.2 Analogy with 'Video features extraction-Recommendation algorithm'

SENGINE AI

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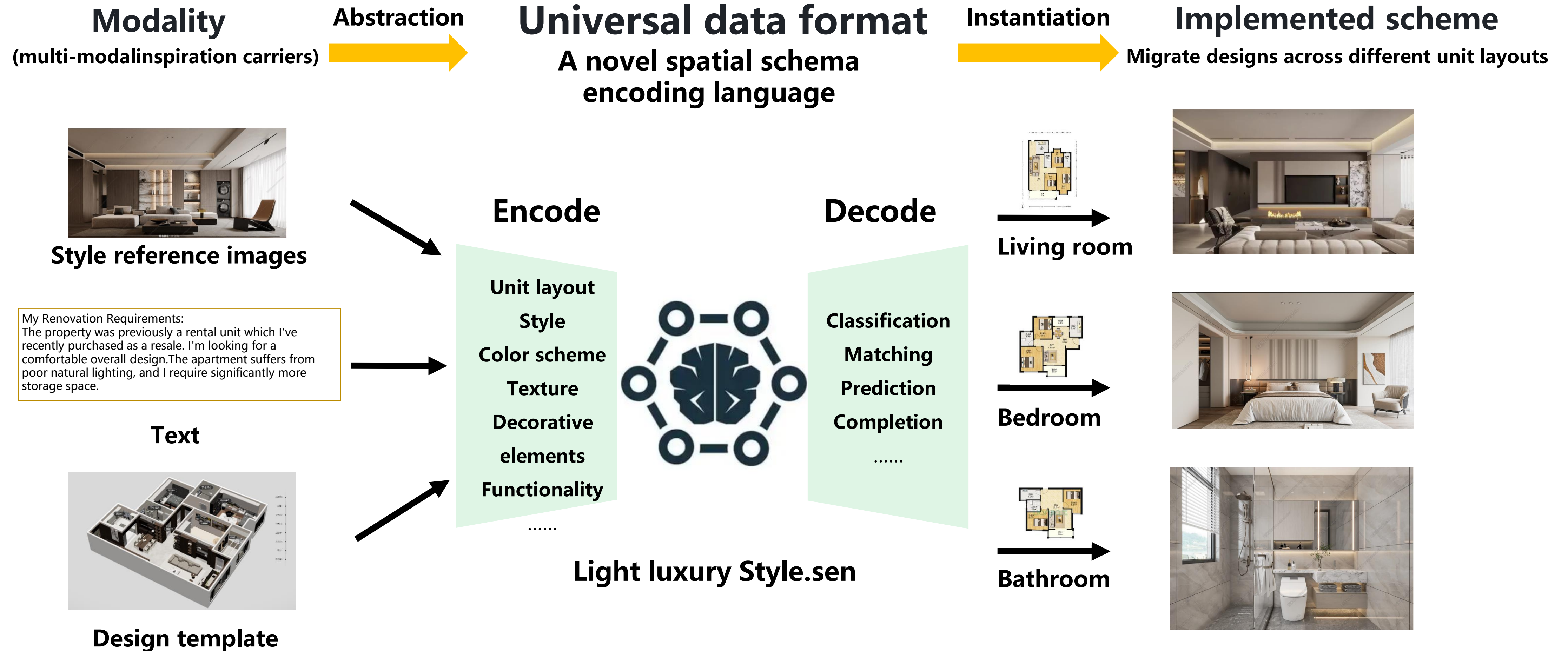
Modality
(multi-modal inspiration carriers)

Abstraction →

Universal data format
A novel spatial schema encoding language

Instantiation →

Implemented scheme
Migrate designs across different unit layouts

Style reference images

My Renovation Requirements:
The property was previously a rental unit which I've recently purchased as a resale. I'm looking for a comfortable overall design. The apartment suffers from poor natural lighting, and I require significantly more storage space.

Text

Design template

Encode
Unit layout
Style
Color scheme
Texture
Decorative
elements
Functionality
......

Decode
Classification
Matching
Prediction
Completion
......

Light luxury Style.sen

Living room

Bedroom

Bathroom

2.1 Multimodal alignment —— Solving data scarcity and interaction issues

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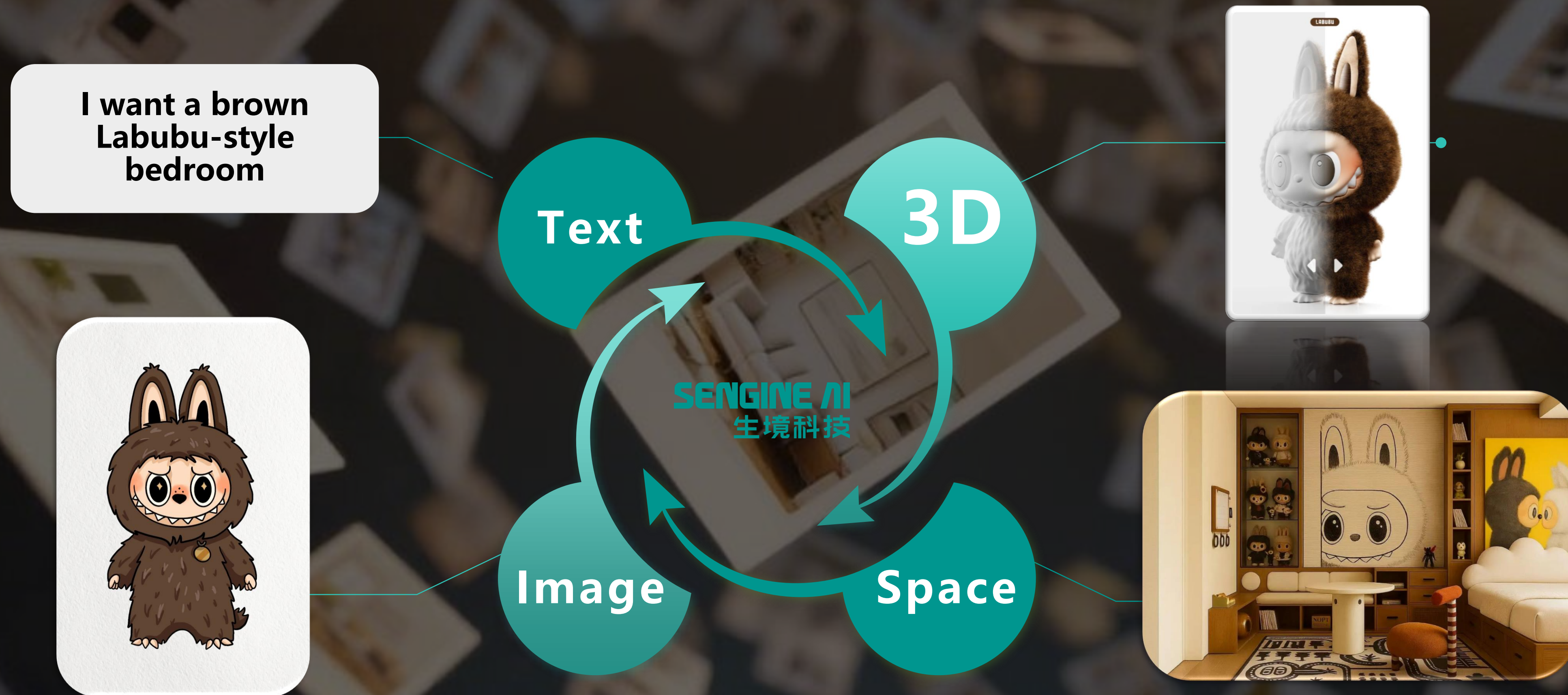
SENGINE AI

10 billion images，10 billion spaces

SENGINE AI

I want a brown Labubu-style bedroom

Text

3D

Image

Space

SENGINE AI
生境科技

2.1 Multimodal alignment —— Solving data scarcity and interaction issues
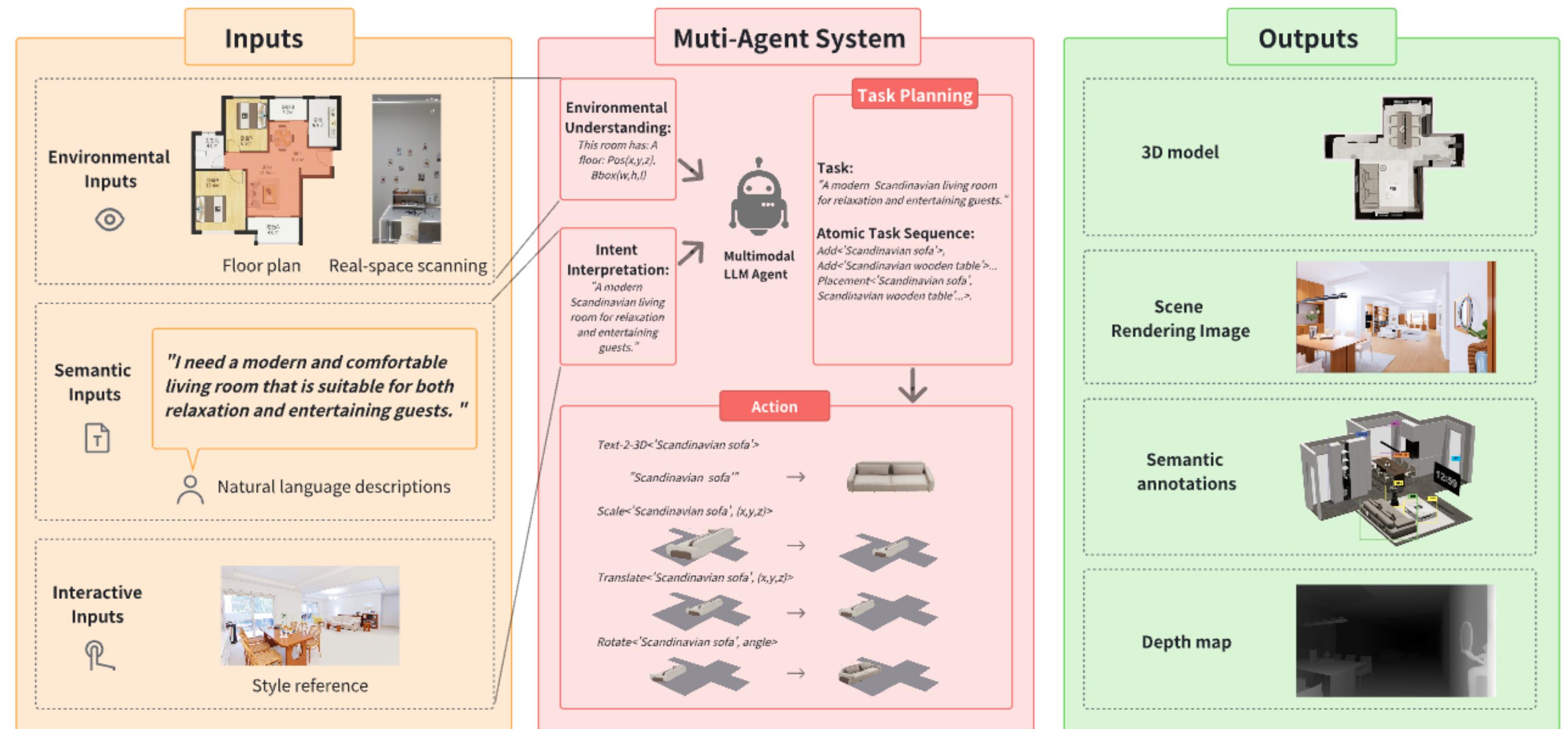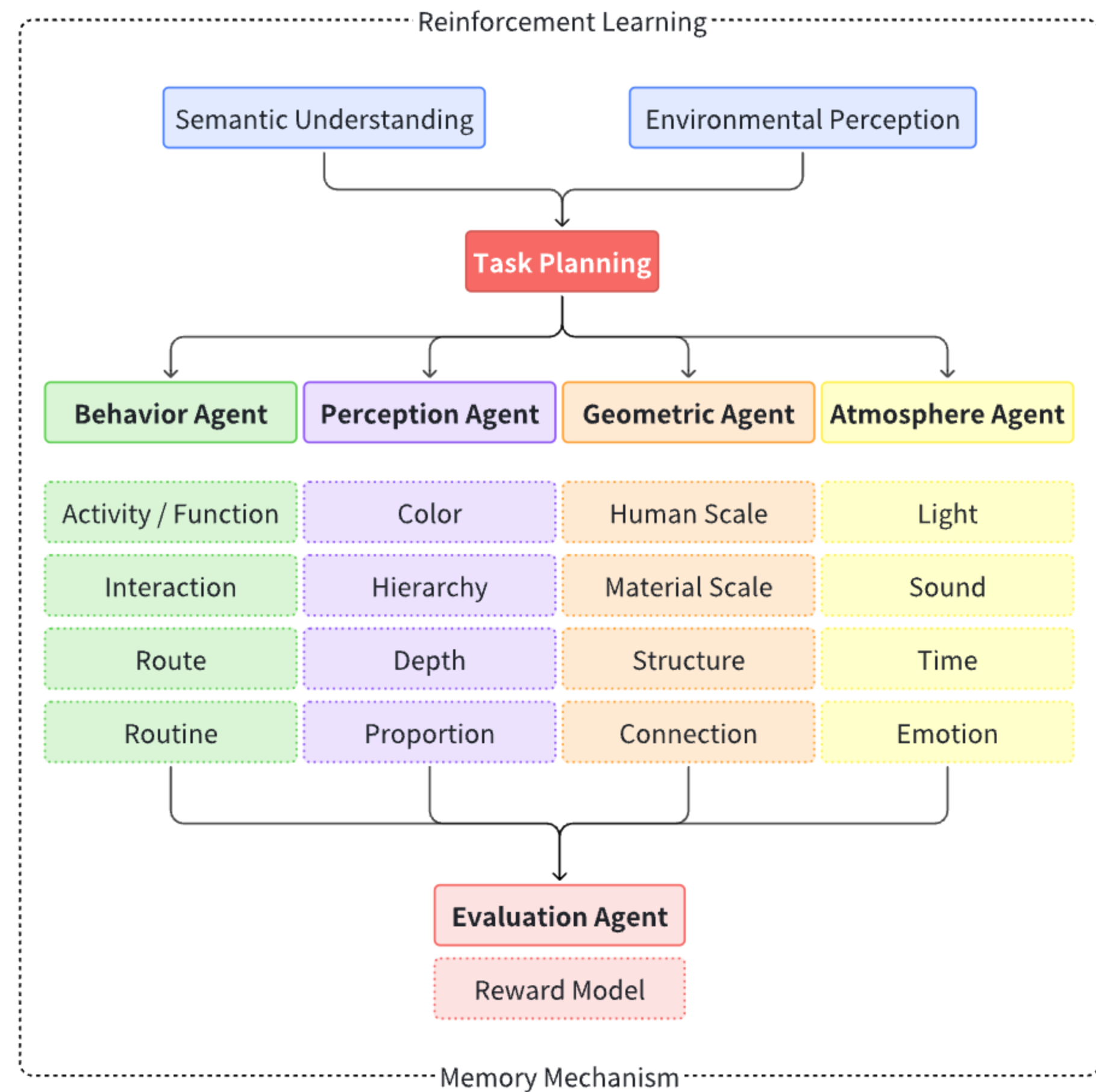
风格 Style

自定义

上传参考图例

生境

北欧宜家

生境

奶油少女

生境

赛博电竞

全局

布局

商品

出图

3D空间白模
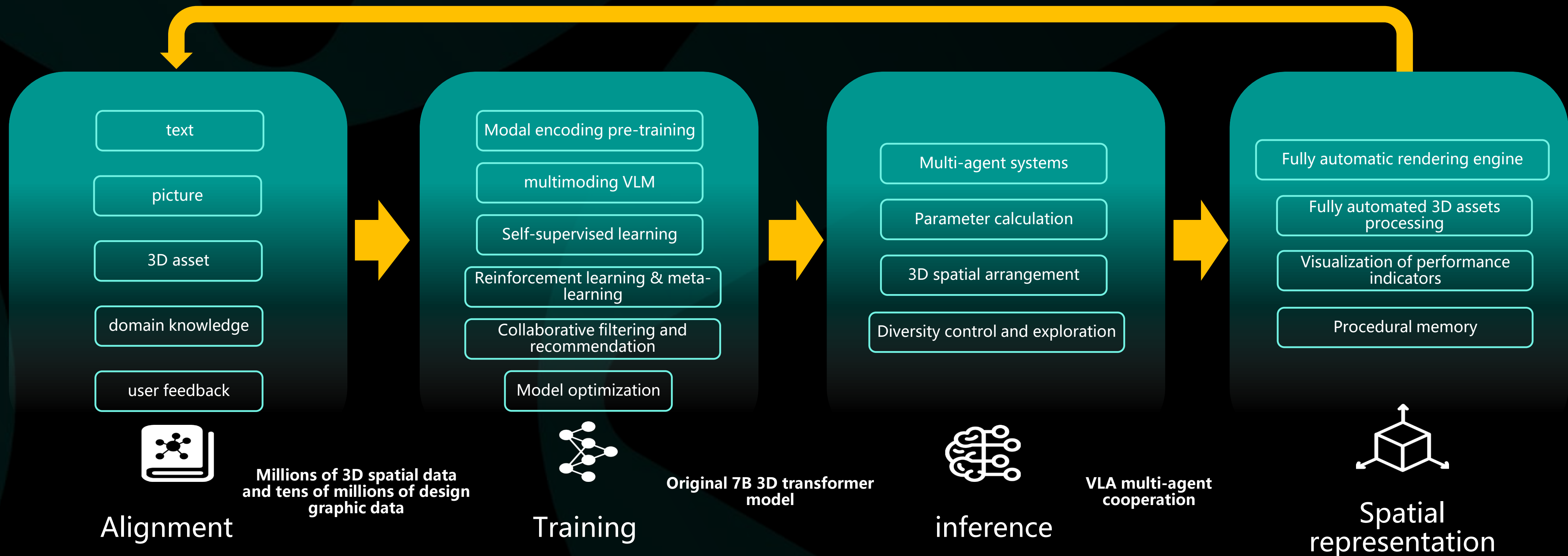
3.1 VLA Intelligent Agent Framework——Focus On Solving Complex Tasks

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Spatial Computing Workflow

The loop of alignment-training-inference-spatial representation

Alignment	Training	inference	Spatial representation
text	Modal encoding pre-training	Multi-agent systems	Fully automatic rendering engine
picture	multimoding VLM	Parameter calculation	Fully automated 3D assets processing
3D asset	Self-supervised learning	3D spatial arrangement	Visualization of performance indicators
domain knowledge	Reinforcement learning & meta-learning	Diversity control and exploration	Procedural memory
user feedback	Collaborative filtering and recommendation		
	Model optimization		

Millions of 3D spatial data and tens of millions of design graphic data

Original 7B 3D transformer model

VLA multi-agent cooperation

SENGINE AI

Sengine AI is the worlds first company to conduct digital encoding and AI training research for spatial schemes. They have built a complete spatial scheme encoding format and self-supervised training system from scratch, covering multiple original aspects such as layout embedding, object pairing attention mechanisms, multi-modal data distillation, and agent reinforcement learning.

Future plan

Expanding from indoor space to outdoor , and closer to reality

ESHOP

Scene Generation

Transfer KOL 's interior design to my house

EMBODIED AI

Synthesizes Data

Provide embodied intelligent synthesis scene data

GAME

Scene Generation

Built and generate virtual Game scenes in real time

LIVE /FILM

Scene Generation

Real-time generation and interaction between film and television or live streaming scenes

XR/AR/VR

Augmented reality scenarios

Real-time generation and interaction of virtual and real scenes/objects

The Spatial 3D Era infrastructure are Mature, Mirroring the Short-Video Boom a Decade Ago

Front   Left   Right   Back

3D asset costs reduced 100-fold:
from $2,00/item to $0.01/item

VR/AR devices (eg.Apple VisionPro)
urgently require New killer apps

AI Spatial Game

SENGINE AI

World's First Single-Scan Full-Scene Merchandising Ecosystem

AI generates your dream room in one scan, triggering impulse purchases for "complete collections"

SENGINE APP

Position
Leveraging AI to transcend physical product limitations: Our "single-product capture → full-scene derivation" model rapidly generates high-conversion marketing content.

Function
- **Intelligent Scene Generation**
  Upload a single IP product image → AI designs/outputs coordinated room scenes (home furnishings, stationery, apparel, etc.)
- **One-Click Commerce Content Creation**
  Auto-generates product display visuals + 3D virtual showrooms for live-streaming/social platforms
- **Rapid IP Collaboration Deployment**
  Enables brands/IP owners to conduct market testing without physical production, visualizing commercial potential
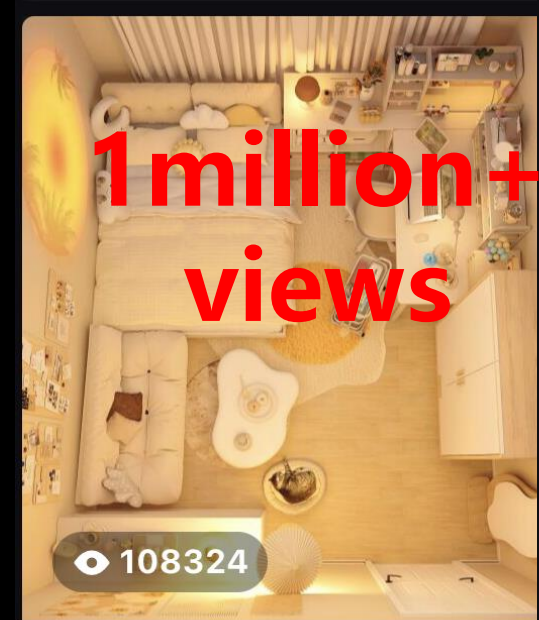
Client

POP MART   Sanrio   MARVEL

DC   NBA   LEGO   BANDAI   TOP TOY

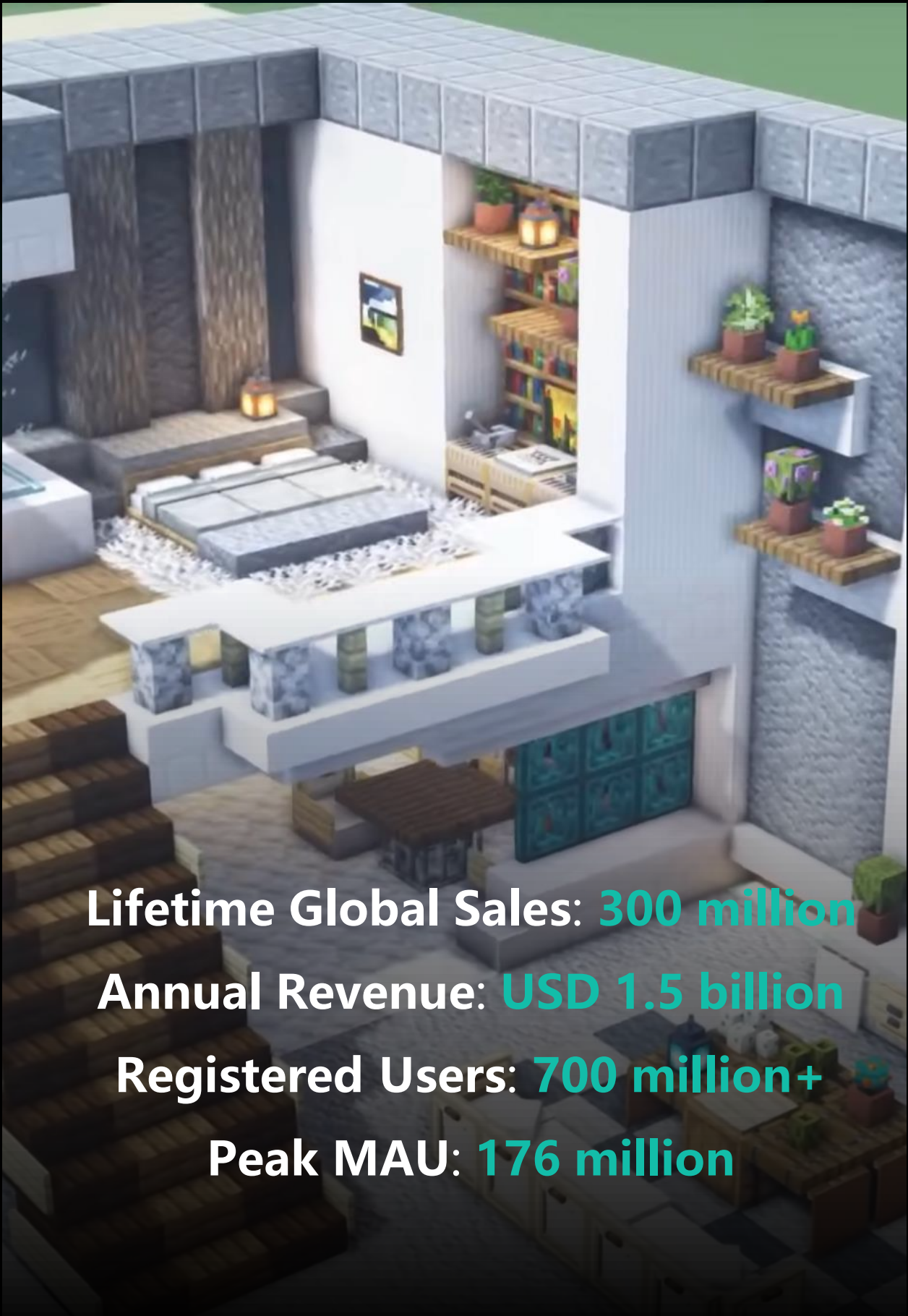| Time	Week 2 of March	Week 3 of March	Week 4 of March	Week 2 of April	Week 3 of April	Week 4 of April
Views	4.965 million	4.025 million	8.052 million	18.47 million	13.68 million	5.25 million

Competitive Benchmarking Homestead Simulation Games

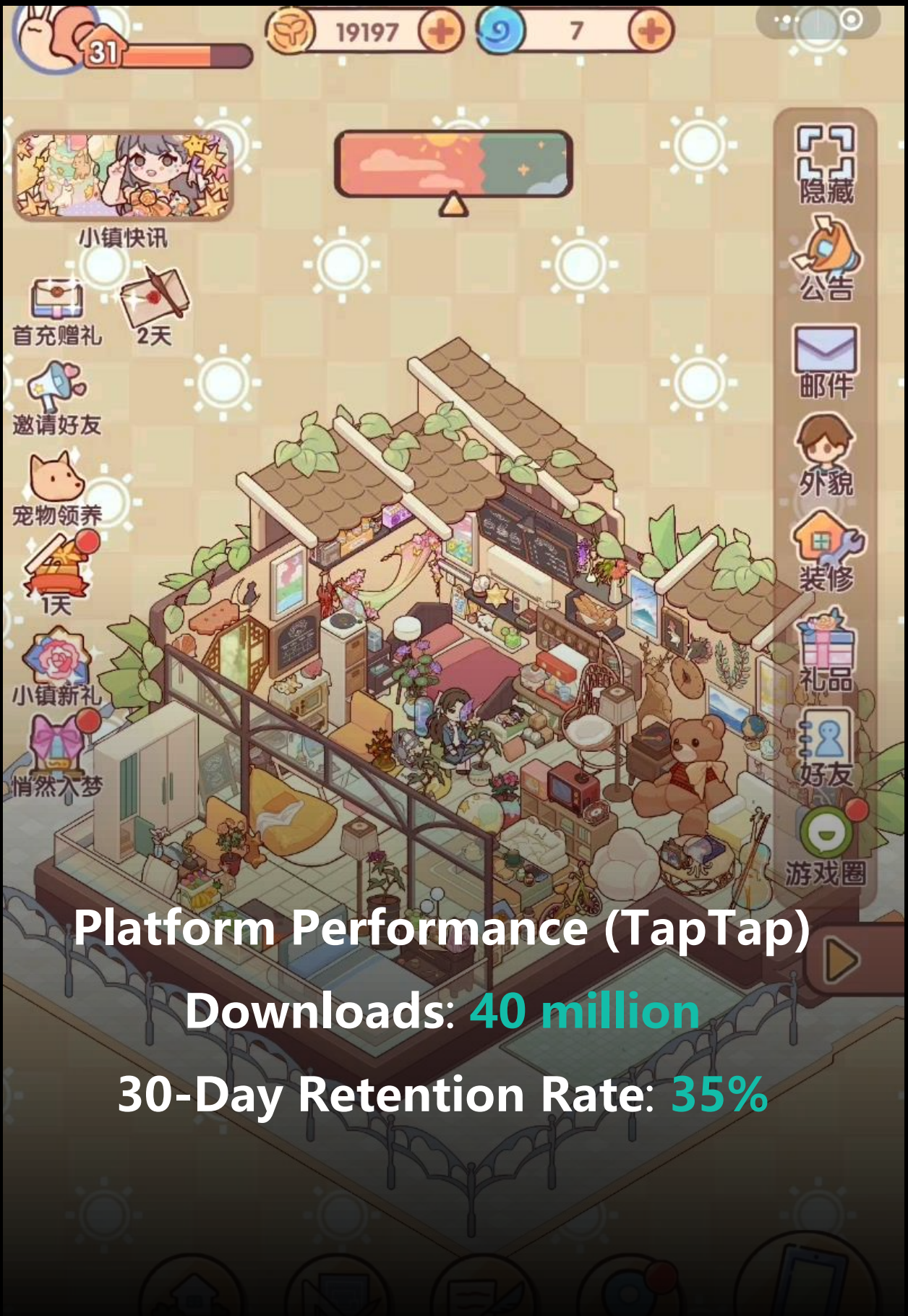SENGINE AI

Global Sales Volume: 47million
Total Revenue: USD 3 billion
MAU: 30 million

Lifetime Global Sales: 300 million
Annual Revenue: USD 1.5 billion
Registered Users: 700 million+
Peak MAU: 176 million

Total Registered Users: 1 billion+
Current MAU: 100 million

Platform Performance (TapTap)
Downloads: 40 million
30-Day Retention Rate: 35%

SENGINE AI

Roblox: $58 Billion Market Capitalization

A Novel AI-Powered Spatial killer App Bridging Physical Business Scenarios

Gaming & Metaverse 3D Content Platform for UGC

生境科技 SENGINE AI

Gaming & Metaverse Spatial Content Platform for UGC & AIGC

Embodied AI/Autonomous Driving:
Synthetic Data as the Only Path Forward

95% of Google Waymo's autonomous vehicle training data are synthetic data.

1 Real scene construction

Current Data scale : 10K

Requires extensive additional
collection ,Poor generalization

Limited applicability
High cost (~$1M per sample)

2 Manual modeling

Current Data scale : 1M

Poor generalization

High cost (~$100K per sample)

3 Synthetic data

Future Data scale : Billions

Stress-tested edge cases
Universal generalization

low cost (~$100 per sample)
Infinite generation

TESLA

Zhiyuan Robot

UNITREE 宇树

JBTECH
Dream With Robots

scale
Valuation: $100B

Google

群核科技
MANYCORE
Valuation: $20B

整数智能
MOLAR · INTELLIGENCE
Valuation: $0.2B

GALBOT

Desktop scale – 3D
software integration

Valuation: $18B

Hillbot

Spatial scale – Video
synthesis pipeline

Valuation: $16B

SENGINE AI

Spatial scale – End-to-end
3D architecture

Valuation: ?

The synthesis Data with two core components:
Scene Generation (Gen) vs Simulation (Sim)

Current research focuses on the SIM layer,
Gen becoming the system bottleneck

Scene Generation Engine – GEN

Approach 1: Video Synthesis + 3D Reconstruction (Cosmos,Hillbot)

Approach 2: End-to-End 3D Generation
· GNNs, Diffusion Models, PCG (Procedural Content Generation)

Physics Simulation Engines – Sim

NVIDIA Issac Sim
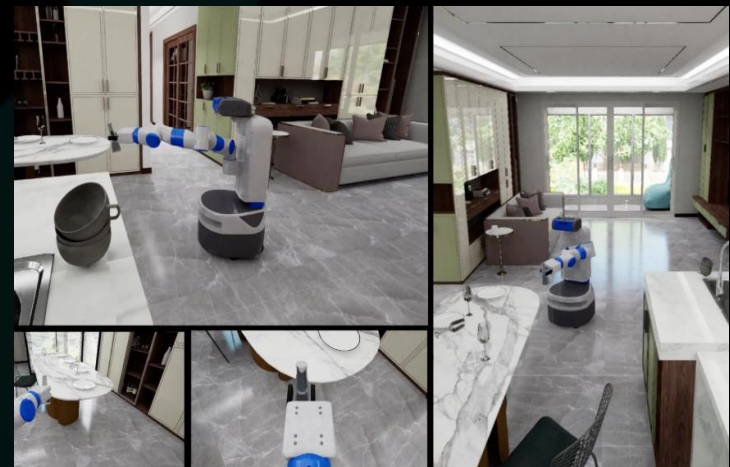Open-source Genesis
Mata Habitat
Maniskill
Unity, UE

Sengine 3D spatial generation technology emerges as the key to breakthrough synthetic pathways

Shortage of High-quality spatial synthetic data

SENGINE AI

Galbot

Hillbot
Sapien&ManiSkill

Cosmos Video
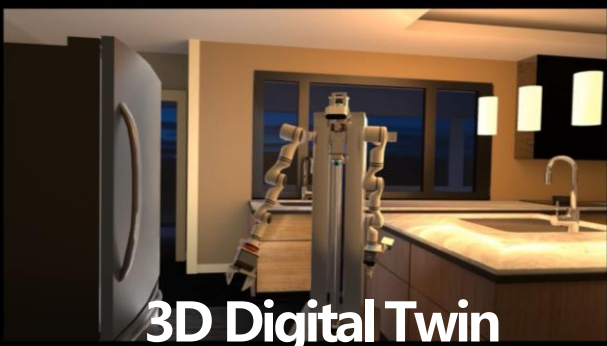
3D Digital Twin

Only desktop-scale

Video-to-3D pipelines induce significant information loss

NVIDIA
Infinigen

Stochastic rules exhibit deficient spatial rationality

ManyCore

Manual construction precludes asymptotic generability

Scene Complexity

Data Quality
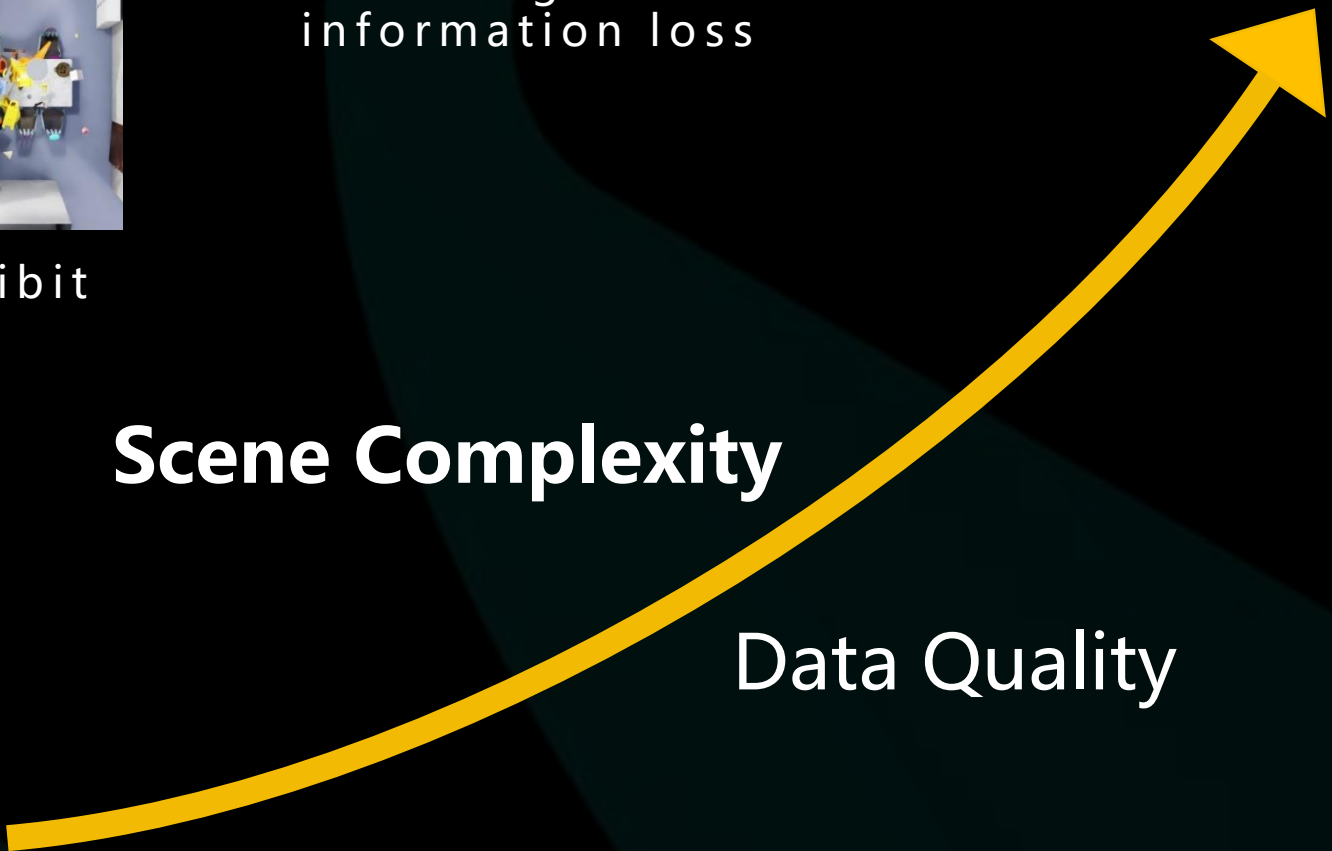
Object Interference: Depth, folding, clutter, adjacency (e.g., finding an apple in stacked fruit).

Category Generalization: Unseen but similar items (e.g., recognizing books with different covers).

Complex Task Handling: Sequential actions (e.g., fetch fruit → slice in kitchen → deliver to bedroom).

Lighting Conditions: Intensity, direction, color temp, shadows, reflections (e.g., detecting mirrors).

Sengine Infinitely Automated Generate Photorealistic 3D Scenes

SENGINE AI
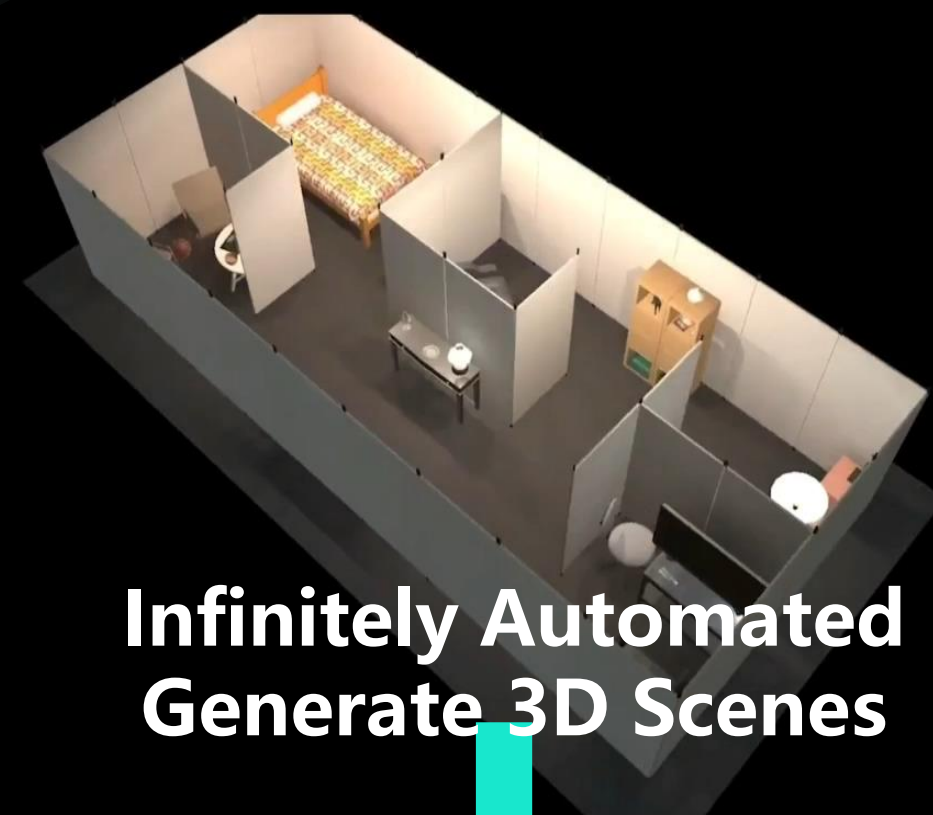
Infinitely Automated Generate 3D Scenes

Physics Simulation Engines (e.g., issac sim、Genesis)

Interaction   Feedback

3x
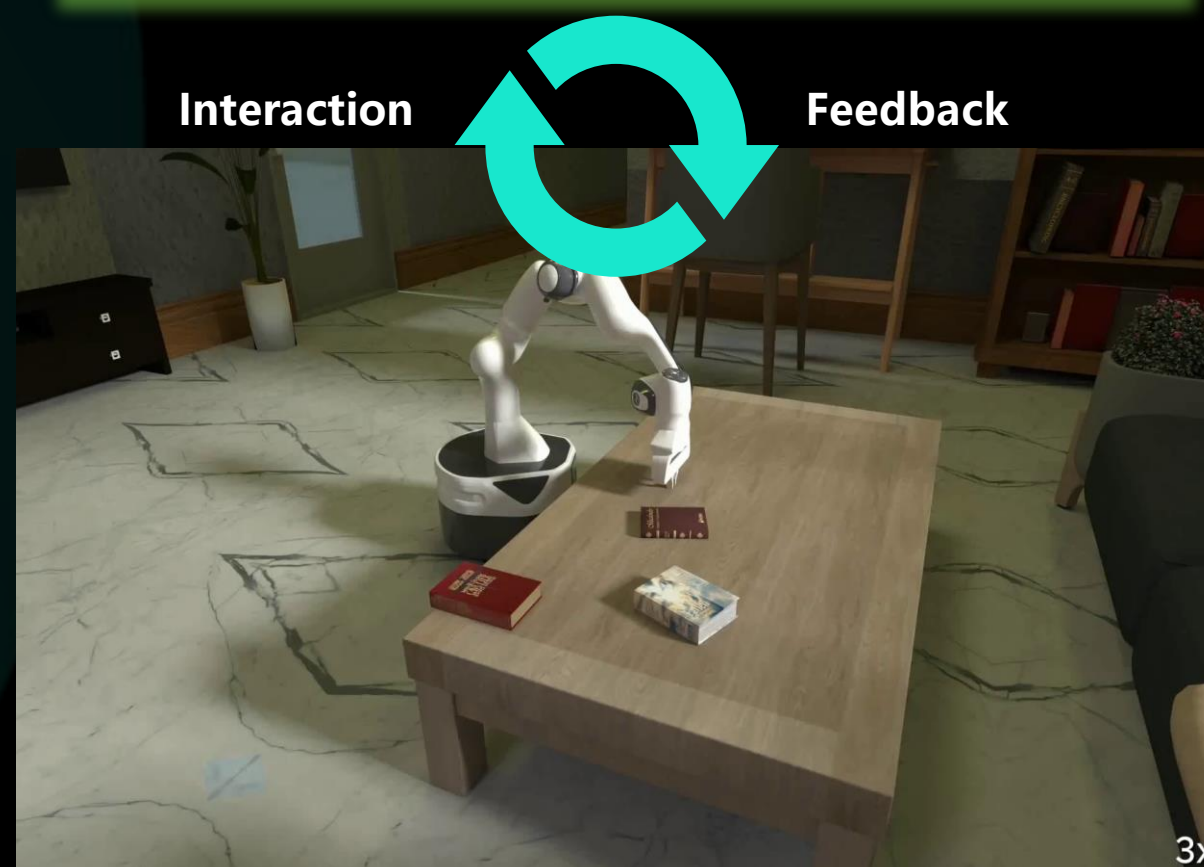
Premium Quality Dataset:

- **Vector-based data, Physical simulation**
- **Life-like simulation parameters :** Anthropometric furniture proportions, Regulation compliant arrangement, Physically-based material and color matching

生境智能空间

SENGINE

CLIENT LIST   nVIDIA.   UNREAL ENGINE   Unity   UNITREE宇树   Motphys   SYNAPATH AI   招商局

Homestead Simulation Games

End-to-End Spatial Generation Technology

【End-to-End Spatial Generation】 is not isolated algorithms, but a self-consistent, closed-loop, and evolvable system. It transforms "**2D plans / 3D scans**" directly into cinematic, interactive 3D scenes by:

1: Building a proprietary spatial encoding format。

2: Developing a self-supervised training framework。

3: Creating a chained pipeline: Data →Encoding → Decision →Rendering → Feedback.

生境AI

"我家原来可以这样"

E-commerce API

SENGINE AI

Item/Product-Interactive Scene End-to-End API Solution

Serving as infrastructure for e-commerce, gaming, home furnishing, XR, film production, and digital twins, it currently handles over 10,000 daily API calls.

购物平台商品
AI一键放我家

CLIENT LIST
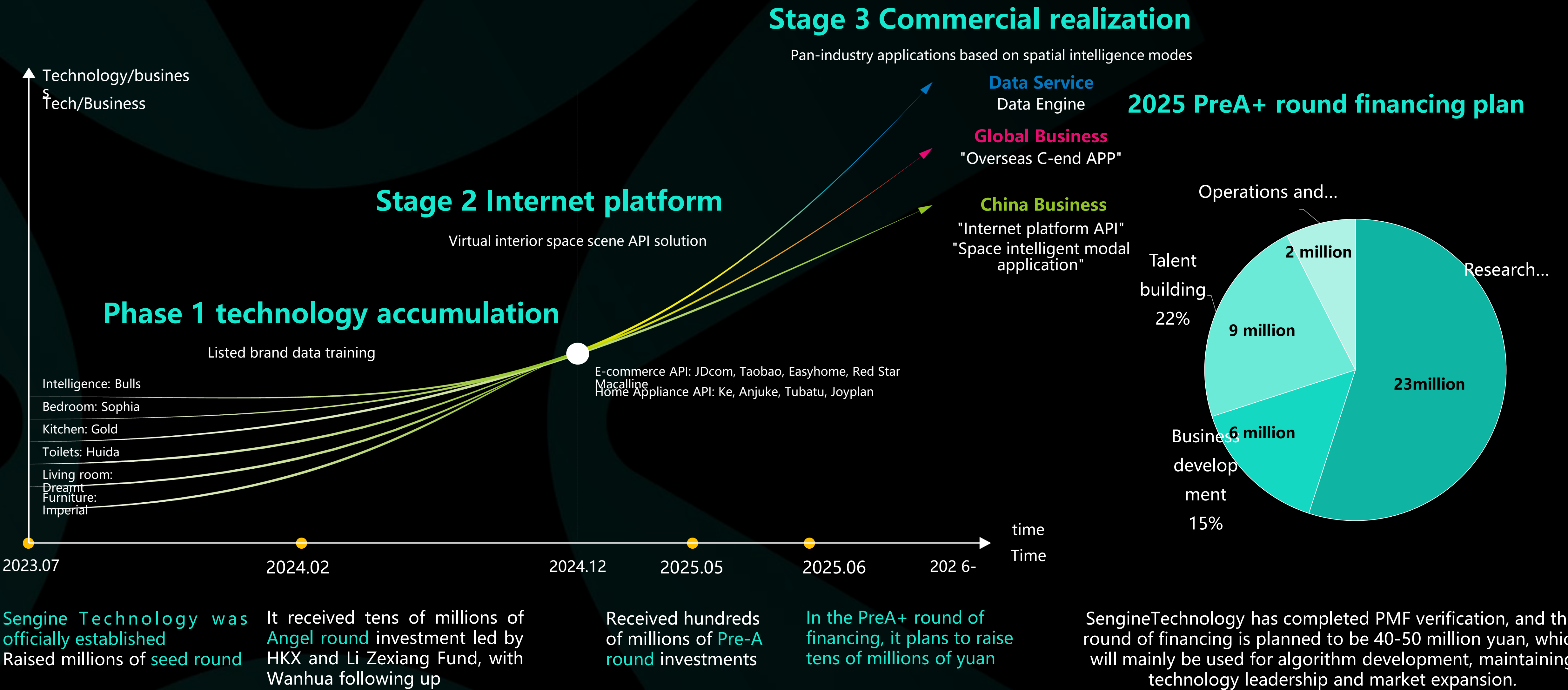
The SENGINE MCP

SENGINE AI

Acquire Traffic & Build a Data Flywheel with User-Generated Content

1,000+ New Daily Signups

全屋空间智能生成 | 布局方案一键分析 | 柜体门窗自动设计 | 软装家具智能搭配

CLIENT LIST Baidu百度 Google Bing 腾讯元器 扣子

Financing & Market Straticgy

SENGINE AI

Stage 3 Commercial realization

Pan-industry applications based on spatial intelligence modes

Data Service
Data Engine

2025 PreA+ round financing plan

Global Business
"Overseas C-end APP"

China Business
"Internet platform API"
"Space intelligent modal application"

Stage 2 Internet platform

Virtual interior space scene API solution

Phase 1 technology accumulation

Technology/business
Tech/Business

Listed brand data training

Intelligence: Bulls
Bedroom: Sophia
Kitchen: Gold
Toilets: Huida
Living room: Dreamt
Furniture: Imperial

E-commerce API: JDcom, Taobao, Easyhome, Red Star Macalline
Home Appliance API: Ke, Anjuke, Tubatu, Joyplan

Operations and...

Talent building
22%

Research...

2 million

9 million

23million

Business development
15%

6 million

time
Time

| 2023.07 | 2024.02 | 2024.12 | 2025.05 | 2025.06 | 202 6- |

Sengine Technology was officially established
Raised millions of seed round

It received tens of millions of Angel round investment led by HKX and Li Zexiang Fund, with Wanhua following up

Received hundreds of millions of Pre-A round investments

In the PreA+ round of financing, it plans to raise tens of millions of yuan

SengineTechnology has completed PMF verification, and this round of financing is planned to be 40-50 million yuan, which will mainly be used for algorithm development, maintaining technology leadership and market expansion.

Development Milestones

SENGINE AI

Sengine Tech is an emerging AI company founded by top-tier AI talents, based in Nanshan, Shenzhen. Focused on **human-centric spatial generation systems**, it is mentored by **Academician Meng Jianmin and Professor Li Ze Xiang**.

The company currently has a team of 50+ members and has secured investment from top-tier financial institutions (Sequoia Capital), government-backed funds (Nanshan Strategic Emerging Industries Investment), and industry leaders (gaming, supply chain sectors)

API services power clients like Baidu, Alibaba, aiming to become the "DeepSeek" of Spatial modality.

May 2025
Raised **multi-million Pre-A round** led by **Nanshan Strategic Investment**, **Leaguer Capital & WowFish** participating

July 2024
Delivered **Wanhua Group's AI design platform Meituan Hotel project** successfully deployed **(China's first AI prefab solution)**

Sep 2023
Multiple listed companies sought collaboration
Launched China's first AI-powered home design mini-program

Feb 2025
Launched **Sengine AI – World's first 3D home design AI application**
Exclusively showed at Baidu Create Annual Conference

Feb 2024
Secured **multi-million angel funding** led by **HKX & Li Ze Xiang Fund**, with Wanhua co-investing

July 2023
Sengine founded

生境科技作为唯一的AI初创企业
被李彦宏在主题演讲上专门介绍

比如在搜索框里头输入

李彦宏
百度创始人
Create2025百度AI开发者大会演讲

SENGINE AI

Show to the Mayor of
Shenzhen City

NEWS Report