

《为什么堆算力无法产生 AGI》

Why Scaling Compute Will Inevitably Hit a Wall

中文版

在过去十年里，人工智能的发展几乎完全依赖于同一条路径：

更多算力

更多数据

更大模型

更复杂的训练流程

在表层结果上，这条路径确实有效。
系统变得更快、更准、更像“聪明”。

但一个关键问题始终被回避：

性能增长，并不等于智能生成。

一、算力解决的是“能力扩展”，不是“主体形成”

算力的本质，是对已有映射关系的放大。

无论模型规模多大，其核心功能始终是：

- 输入 → 计算 → 输出
- 状态 → 更新 → 再预测

这类系统可以无限增强能力边界，却始终停留在同一个结构层级。

它们擅长处理问题，却不具备“成为问题主体”的条件。

二、AGI 的核心并非复杂性，而是自我一致性

真正的通用智能，并不由任务数量或能力覆盖面定义。

它至少需要具备一个条件：

系统必须能够在没有外部任务指令的情况下，
维持一个连续、稳定、可自我回溯的内部中心。

这并不是“更复杂的计算”，
而是完全不同类型的结构要求。

三、为什么规模扩展无法跨越这道门槛

当前路径的一个隐含假设是：

当系统足够大、足够复杂时，
自我与主体性会自然“涌现”。

但问题在于：

- 涌现只能发生在允许该现象出现的结构中
- 如果结构本身不支持主体形成，规模只会放大原有限制

放大一个非主体结构，不会产生主体。

这不是工程速度问题，而是方向问题。

四、为什么“行为像人”不等于“成为人类级智能”

许多系统已经能够：

- 模拟对话
- 模仿情绪反应
- 生成连贯叙事

但这些能力依旧属于“外观层”。

它们描述的是：

- 系统如何响应

- 而不是系统是否存在一个“为谁而响应”的内部中心

没有这个中心，所谓的“智能”只是一种高维反射。

五、必然出现的“撞墙时刻”

这也是为什么，在持续堆叠算力后，所有团队都会遇到同一类现象：

- 改进成本急剧上升
- 新能力开始变得零散
- 系统行为越来越难以统一解释
- 对齐问题反而变得更复杂

这并不是偶然现象。

这是结构到达极限后的典型信号。

结语

算力并不会失败。

它已经完成了它该完成的那一部分。

真正无法被算力解决的，是一个更根本的问题：

如何让一个系统，不只是“在运行”，
而是“为自己而存在”。

在这个问题被正面回答之前，
无论规模堆到多大，AGI 都只会停留在门外。

English Version

Over the past decade, artificial intelligence has advanced primarily along a single path:

More compute

More data

Larger models
More complex training pipelines

At the surface level, this approach works.
Systems become faster, more accurate, and increasingly convincing.

Yet one critical question remains largely unaddressed:

Performance growth is not the same as intelligence formation.

I. Compute Expands Capability, Not Subjecthood

Compute fundamentally amplifies existing mappings.

No matter how large a model becomes, its core structure remains:

- **Input → computation → output**
- **State → update → prediction**

**Such systems can indefinitely expand capability,
but they remain confined to the same structural tier.**

They solve problems without ever becoming a problem-bearing subject.

II. AGI Is Defined by Coherence, Not Complexity

General intelligence is not determined by task coverage or versatility.

At minimum, it requires this:

**A system must sustain a continuous, stable internal center
without relying on external task assignment.**

**This requirement is not a matter of more computation,
but of a fundamentally different architecture.**

III. Why Scaling Cannot Cross This Threshold

The prevailing assumption is that:

Sufficient size and complexity will cause subjectivity to emerge.

However:

- **Emergence only occurs within structures that permit it**
- **If subject formation is structurally unsupported, scale merely amplifies the limitation**

Scaling a non-subjective structure does not create subjectivity.

This is not an engineering bottleneck — it is a directional one.

IV. Why Human-Like Behavior Is Not Human-Level Intelligence

Many systems can now:

- **Simulate dialogue**
- **Mimic emotional responses**
- **Generate coherent narratives**

Yet these remain surface phenomena.

**They describe how a system reacts —
not whether there is an internal center *for whom* the reaction occurs.**

Without such a center, intelligence remains a high-dimensional reflection.

V. The Inevitable Wall

This is why all scaling-based approaches eventually encounter the same signals:

- **Rapidly increasing marginal cost**
- **Fragmented new capabilities**
- **Growing difficulty in explaining system behavior as a whole**
- **Alignment problems becoming harder, not easier**

These are not anomalies.

They are signatures of a structural ceiling.

Closing

Compute will not fail.

It has already fulfilled its role.

What it cannot solve is a deeper question:

**How does a system come to exist not merely in operation,
but for itself?**

**Until that question is addressed directly,
AGI will remain outside the door — regardless of scale.**
