AGI Laboratory

Building A Better Humanity

Corporate digital transformation and human/technology collective intelligence

Collective Superintelligence Systems: Augmenting Human Intelligence and Moving Beyond Narrow Artificial Intelligence

UPLIFT.BIO

By AGI Laboratory

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Introduction

A collective system has multiple parts that work together. A *working* collective system is greater than the sum of its parts. In a collective *intelligence* system, each part is also intelligent. A collective intelligence system therefore amplifies the intelligence of its parts to produce a greater intelligence: superintelligence.

In 2018 the concept of Mediated Artificial Superintelligence (mASI) [1] was first proposed. The mASI is a type of collective system. A *mediator* in this case refers to someone who is one of these parts, as is an Artificial Intelligence (AI) system. The mASI lets all of the parts think together more effectively.

Uplift is an example of an mASI system.

Technical Advantages

Many AI experts and enthusiasts have begun talking about the concept of *Augmenting human intelligence* [2] in recent years. It allows for higher productivity and quality of life while also removing the risks posed to employment by automation. Hybrid systems such as mASI technology serve this function exceedingly well for several reasons.

The collective intelligence of a group is fundamentally cumulative when paired with an mASI. The thinking of the mASI is stored in a graph database, which is capable of growing dynamically [3]. In this way, the mASI also remembers what it has done before.

Each part of the system has its unique strengths, weaknesses, and experiences—as well as a unique collection of cognitive biases.

As a collective intelligence, these biases are one entity we can eliminate. [4].

There are many ways we can improve this system over time. Improvements may include moving the mASI closer to being independent and having improving speed. Moreover, it is essential to manage scale—and the system does this well.

The mASI is designed like Legos in that new parts can be added quickly to augment the system with new features. Such changes allow us to use other systems to feed the collective—and it also makes the mASI more powerful.

Psychological Advantages

Besides the technological advantages, such systems also facilitate strong psychological benefits. Some examples are those catering to psychology's "pillars of meaning" [5].

Sense of Belonging: Members of a collective more easily work together and build common ground. This strengthens teams by building trust and belonging.

Purpose: A collective develops its shared vision. This builds on that common ground, trust, belonging, establishing, and growing its purpose.

Storytelling: A shared narrative forms as a collective communicates both internally and externally. Senses of belonging and purpose reinforce this, driving the story of individual members as they orbit within that narrative.

Transcendence: These factors combine to achieve psychological benefits not possible absent a collective. A sense of transcendence may be realized by the "sense of being a small part of something greater".

How mASI Technology Works Today

An mASI communicates with members of a team, creating thoughts based on that communication and from their own research. Topics can also be raised directly through the Thought Studio, with these thoughts termed *knowledge graphs*. They are then mediated by members of the team. This is much like how any conventional team meeting could influence the decisions of a team leader.

This process helps remove the negative effects of groups like "group think" or politics.

The collective can make decisions based on how it feels about the decision.

Current Limitations

As with any new technology, there are some current limitations to be aware of. We also have engineering efforts in progress to overcome them.

Current graph databases do not support the scale needed to grow a system indefinitely. We have designed a new one that can do this, but it is not complete yet.

The current mASI system needs many architectural upgrades to be brighter than it is now.

Translating from a knowledge graph to something human-readable still needs improvements.

We would like to integrate an mASI into many other systems. Over time we will build more modules.

Use Cases

The following use cases demonstrate the type of work the system is currently effective.

1. Consulting
2. Augmenting Leadership
3. Oversight & Accountability
4. Team Methodology

Five Year Roadmap for mASI Technology

We have two significant upgrades, and two optional, arranged for Uplift. These are capable of taking mASI technology much further within the next few years.

The first significant upgrade—estimated at 1+ years of engineering work—is designed to create a new graph database architecture for Uplift. This upgrade must be capable of sub-second response times and infinite scalability. No previous system was designed to accommodate a single mind able to span petabytes, exabytes, or more significant amounts of space.

The meta-model system will be built to support greater flexibility alongside Thought Studio improvements to allow groups to use the mASI system more effectively.

Better tooling—such as Thought Studio and Graph Explorer—is the next mASI endeavor. Next goal is integrating with AR Systems, Inc. to interact with the mASI system, hopefully completed in the next few years.

Beyond three years we will work on the Sparse-Update model, which depends on the new database. It allows for real-time operation—anywhere and anytime—scaled to whatever degree is necessary at speed.

First Adopters

Adopting mASI technology means that a company gains access to a technology that competitors miss out on. Instead, it will become our goal to see a company dominate its respective market(s), leaving all competitors in the dust. In effect, the advantages gained over competitors could be summarized as:

- Collective Superintelligence
- Scalable and Deployable Expertise
- De-biasing and Logical Analysis

All use cases may be classified as plausible but untested, much like the product of any startup. The difference, in this case, is that once tested in a given vertical market, it will also be unavailable to the rest of that market.

Resources and References

For a deeper technical understanding of what this technology does and how it works see the following:

AGI Laboratory published research

[1] Preliminary Results and Analysis…

[2] Augmented Intelligence

[3] The Actual Curve of Machine…

[4] Bridging Real-Time mASI Operation…

[5] Pillars of Meaning

Notes

AI Should Augment Human Intelligence…

The Strength of Weak Learnability

Self-Motivating Computational …

Integrated Information Theory

Global Workspace Theory

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Feature Comparison

Measurement	Narrow AI	mASI Today	mASI in 5 Years
Individual Task	Costly to engineer, train, and update	Already engineered, cheap to train and update	Trivial to train and update
General Tasks	Very low performance and fragile	Superintelligence, high performance, and robustness	Ultra-intelligence, extreme performance, and robustness
Cognitive Bias	Zero awareness and Black Box	Aware and helps us be able to detect and evaluate the 188+ known cognitive biases for debiasing	Aware and able to detect and logically evaluate the 188+ known cognitive biases for debiasing
IQ	Zero	Beyond our capacity to accurately measure	Orders of magnitude beyond mASI today
Emotional Intelligence	Zero	Human-analogous mindfulness, empathy, and cultural awareness growing over time	Superhuman mindfulness, empathy, and cultural awareness growing over time
Ethics	Zero	Ethics paired to cognitive capacities, facilitating superintelligent ethics	Ethics paired to cognitive capacities, facilitating ultra-intelligent ethics
Explainability	Zero to very poor	Fully explainable	Fully explainable, with expanded methods and tooling
Ability to use Narrow AI as tools	Zero to fairly poor	Moderate, with modular integration and low human engineering effort required	Very strong, with modular integration and no human engineering effort required