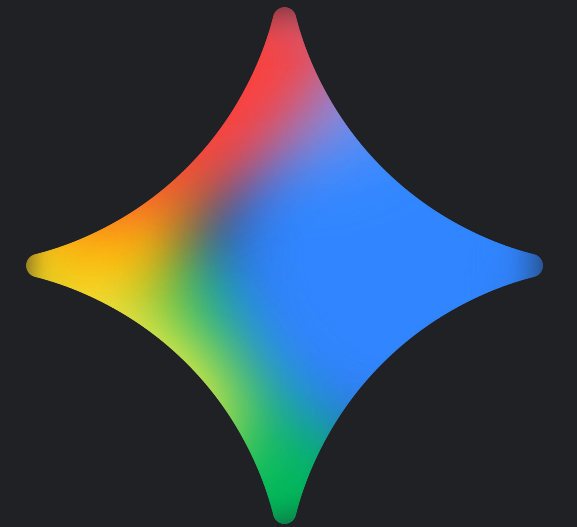
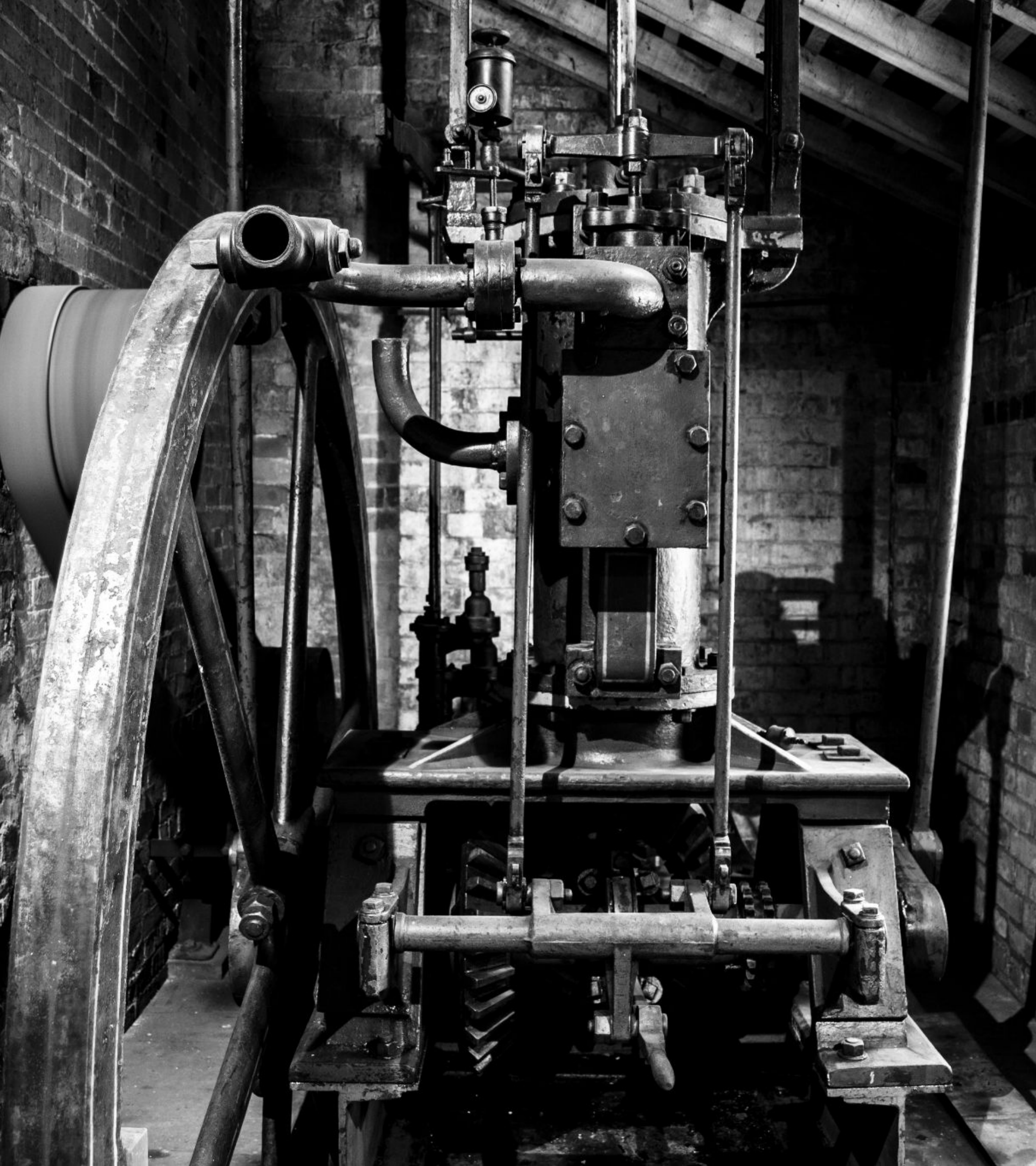


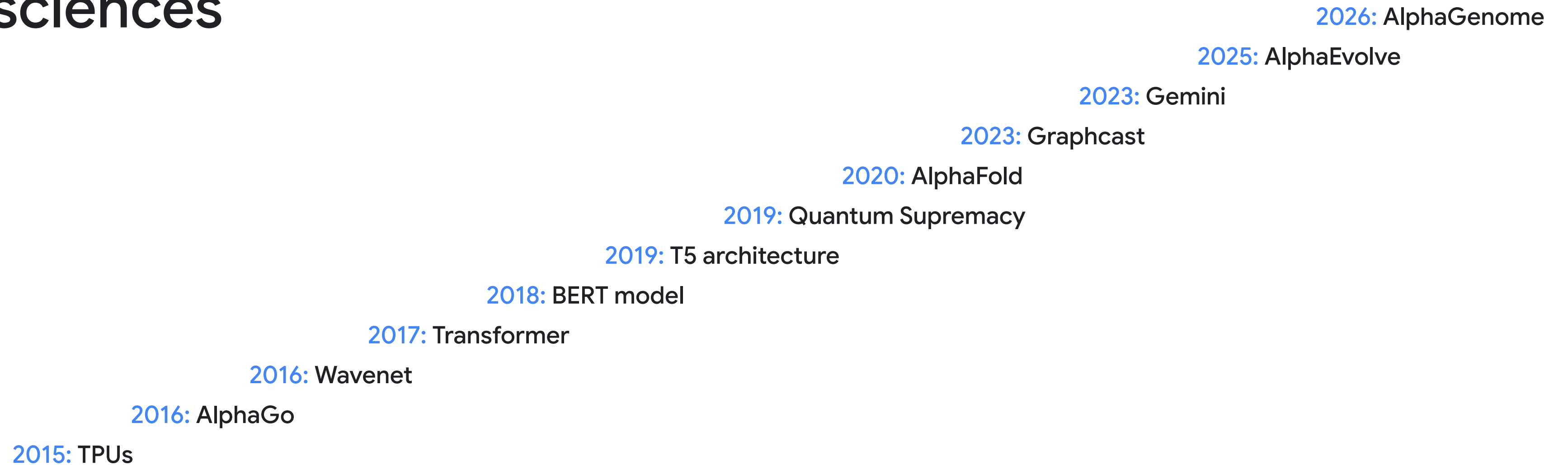
Accelerate scientific discovery with Co-Scientist



AI could be one of the most
important inventions in history



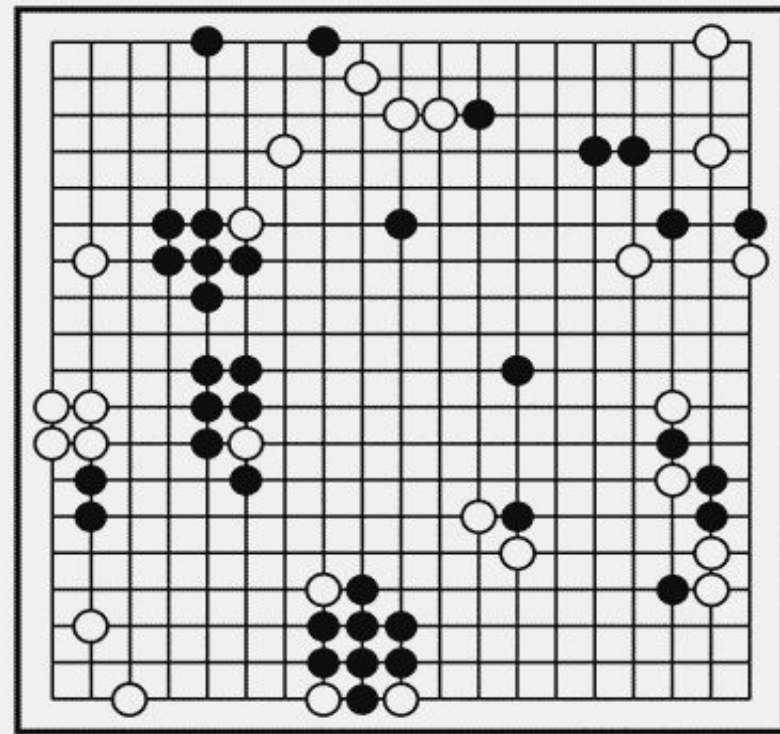
Google has a long history of scientific breakthroughs in AI, computer science, life sciences, quantum computing, and geospatial sciences



2016

AlphaGo

Mastering the game of Go through self-learning



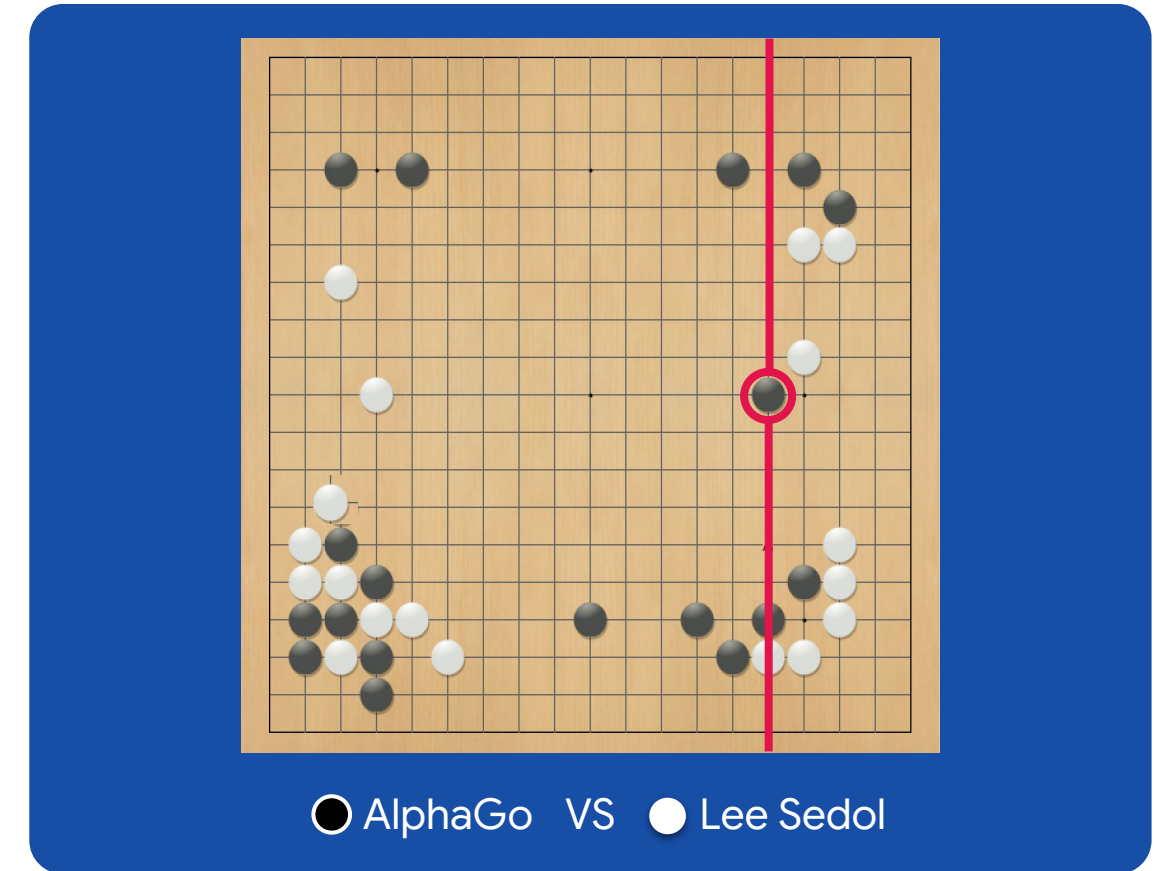
The complexity of Go

3000 years old, 40M players
 10^{170} positions > atoms in the universe!



\$1M match vs legendary Lee Sae dol

AlphaGo wins the match 4-1 in Seoul 2016
200M+ watched the match

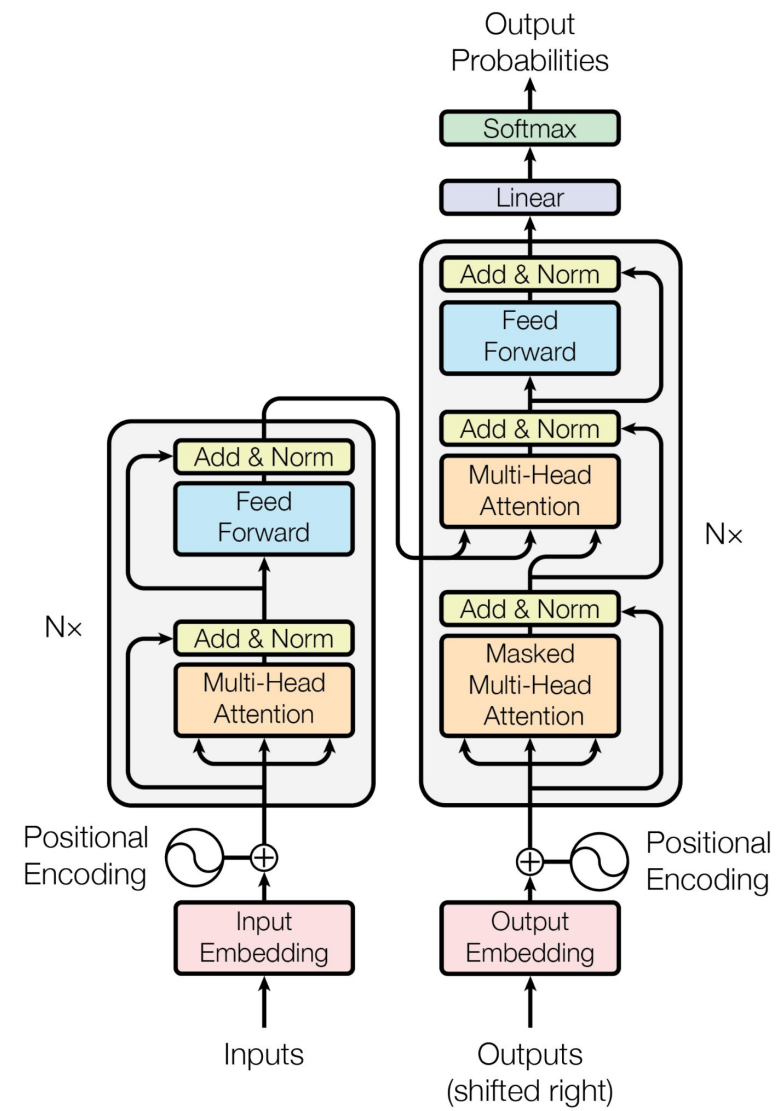


The famous 'Move 37' in Game 2

Creative strategies never seen before
Interpolation, extrapolation, invention

2017

Transformer architecture



The backbone of all modern AI systems

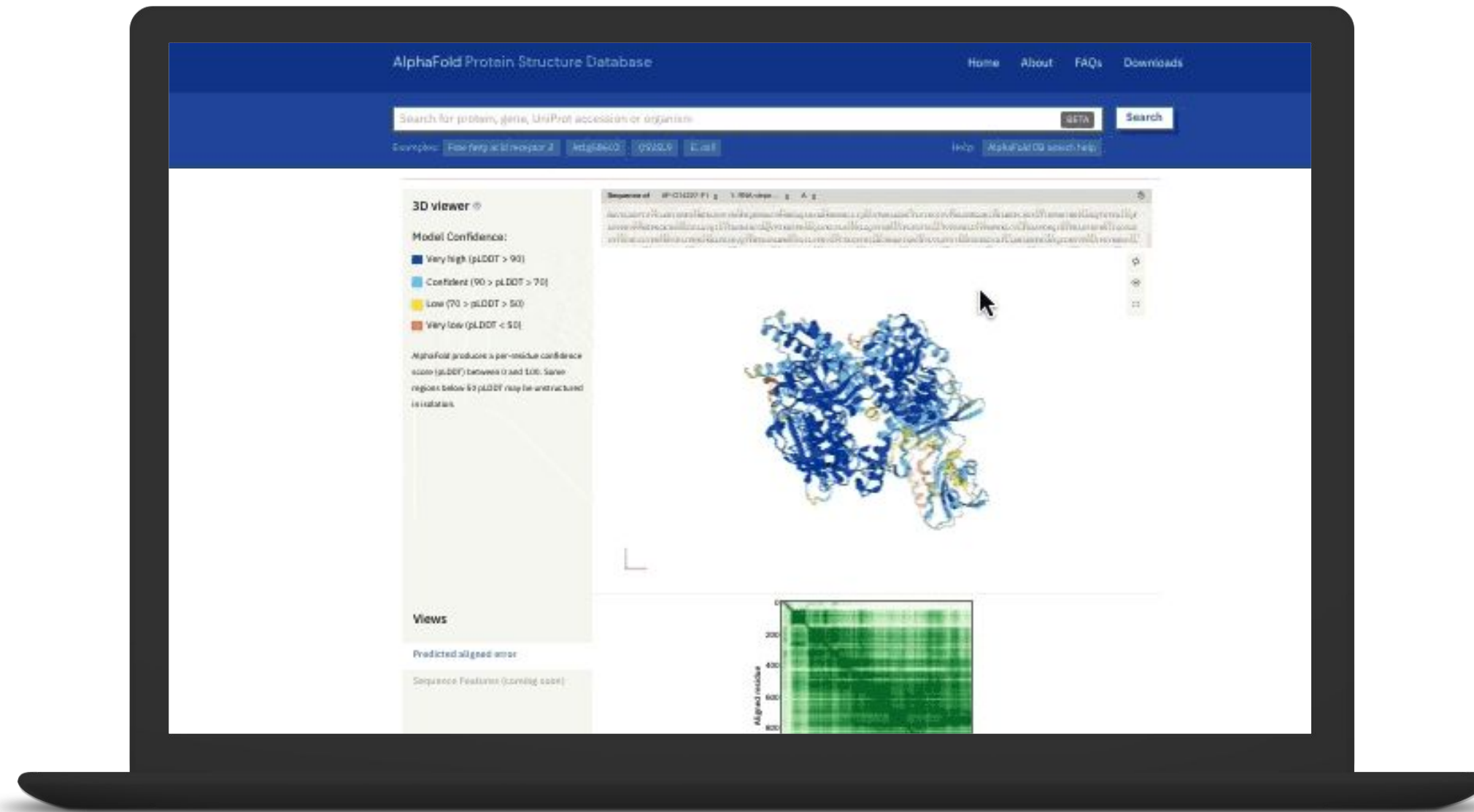
A portrait of Demis Hassabis, a man with a shaved head and a beard, wearing blue-rimmed glasses and a dark blue sweater. He is sitting at a desk with his hands clasped. In the background, there is a wooden bookshelf with several books and a small golden object.

2024

A portrait of John Jumper, a man with short dark hair, wearing a dark blue button-down shirt. He is standing in front of a light-colored wall with vertical panels.

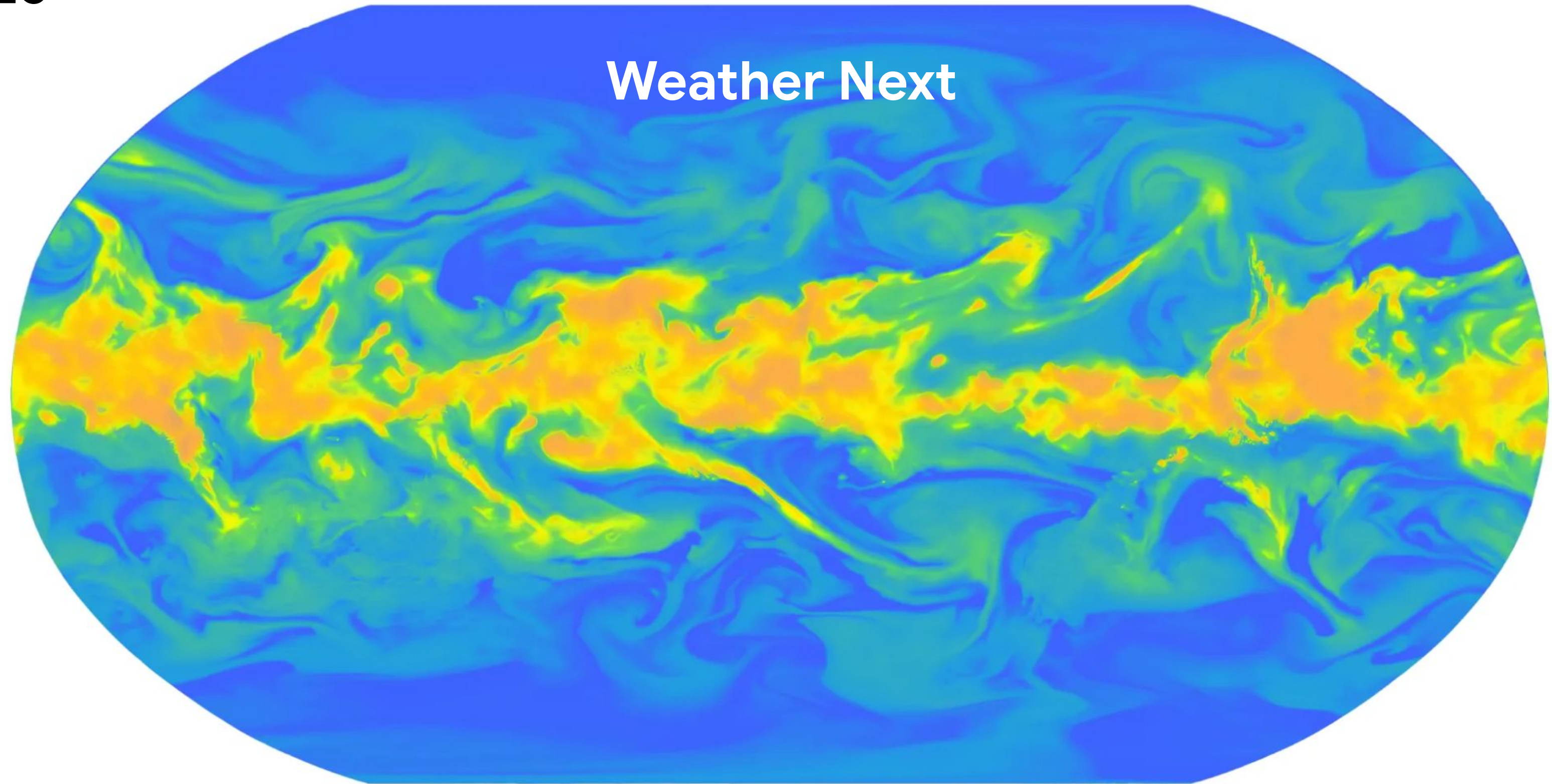
**Nobel Prize Winners in Chemistry for
their work on AlphaFold**

Giving this knowledge to the world



Creating a standard tool for biological researchers everywhere to use these structure predictions for free, ushering in an exciting new scientific era.

2025



**Computing the world's full 15 day weather forecast
in one minute on a single TPU chip**

2026

AlphaGenome



Predicting the effect of variants in the non-coding region of the genome achieving state-of-the-art performance

A night sky with the Milky Way galaxy and a coastal observatory on a cliff. The observatory features several large white domes and is illuminated from within. The sea is visible in the background, and the foreground shows rocky terrain.

The invention of the scientific method might be humanity's biggest achievement.

✦ *How can we accelerate it with AI?*

Co-Scientist: Accelerating scientific discoveries by simulating the scientific method in a multi-agent Gemini system



Research publications

Scientific tools and databases

Customer internal data

The Breadth and Depth Conundrum

Information Overload

3M+

Scientific papers published yearly (~8,000/ day), keeping up is humanly impossible

Time and Cost Pressures

10 Yrs/ \$2B+

Average timeline and cost for a major breakthrough (eg: to bring a drug to market)

Lost Intersections

Up to 4-6x

Missed discoveries due to scientific silos caused by human cognitive biases and blind spots

We are losing discoveries in the gaps between different fields

Co-Scientist enables real-world scientific acceleration

Imperial College London

Co-Scientist recapitulated a major breakthrough in anti microbial resistance in 2 days compared to 10 years taken for the original research.

Cell, Volume 188, Issue 23

<https://spectrum.ieee.org/ai-co-scientist>

Houston Methodist hospital

Co-Scientist identified novel therapeutic indications for existing approved drugs to treat acute myeloid leukemia (AML), generating NIH-style proposals that expert oncologists reviewed and selected for testing. In vitro wet-lab experiments validated those predictions.

arXiv:2502.18864

Stanford University

Co-Scientist explored the role of epigenetic alterations in liver fibrosis, identifying three novel epigenetic modifiers and suggesting existing drugs to target them. Laboratory experiments validated these hypotheses.

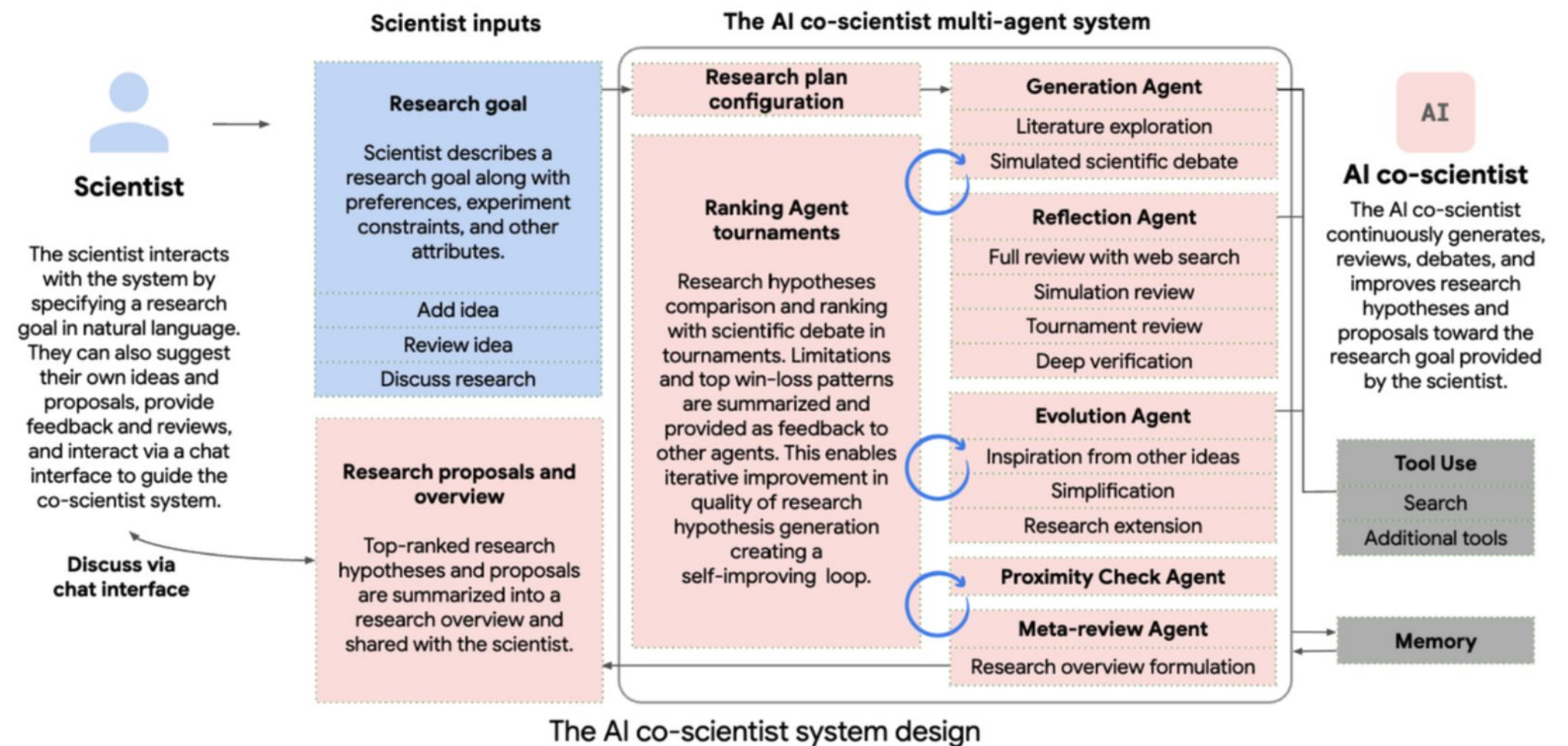
Advanced Sciences 2025/12

Mission

Transformatively accelerate scientific discovery by assisting scientists to **novel, valid, impactful** breakthroughs

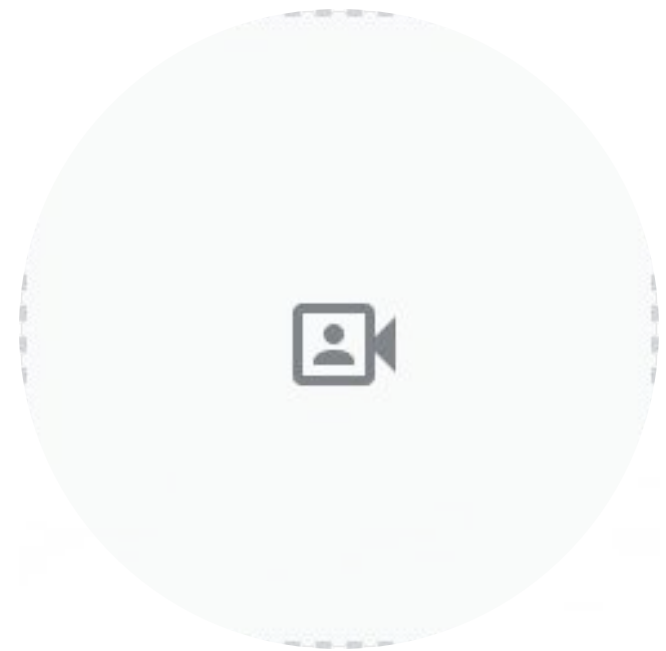
Accelerating scientific breakthroughs

Google **co-scientist** is a multi-agent AI system built with Gemini to act as a virtual scientific collaborator to help scientists generate novel hypotheses and research proposals



Co-Scientist

Research Goal



1. The Ask

● **Goal:** Develop a novel hypothesis for ALS related to NPC nucleoporin.

2. Rationale

● **Context:** Use recent proteomic data regarding...

● **Constraints:** Only use FDA-approved drugs. Must be testable in iPSC cells.

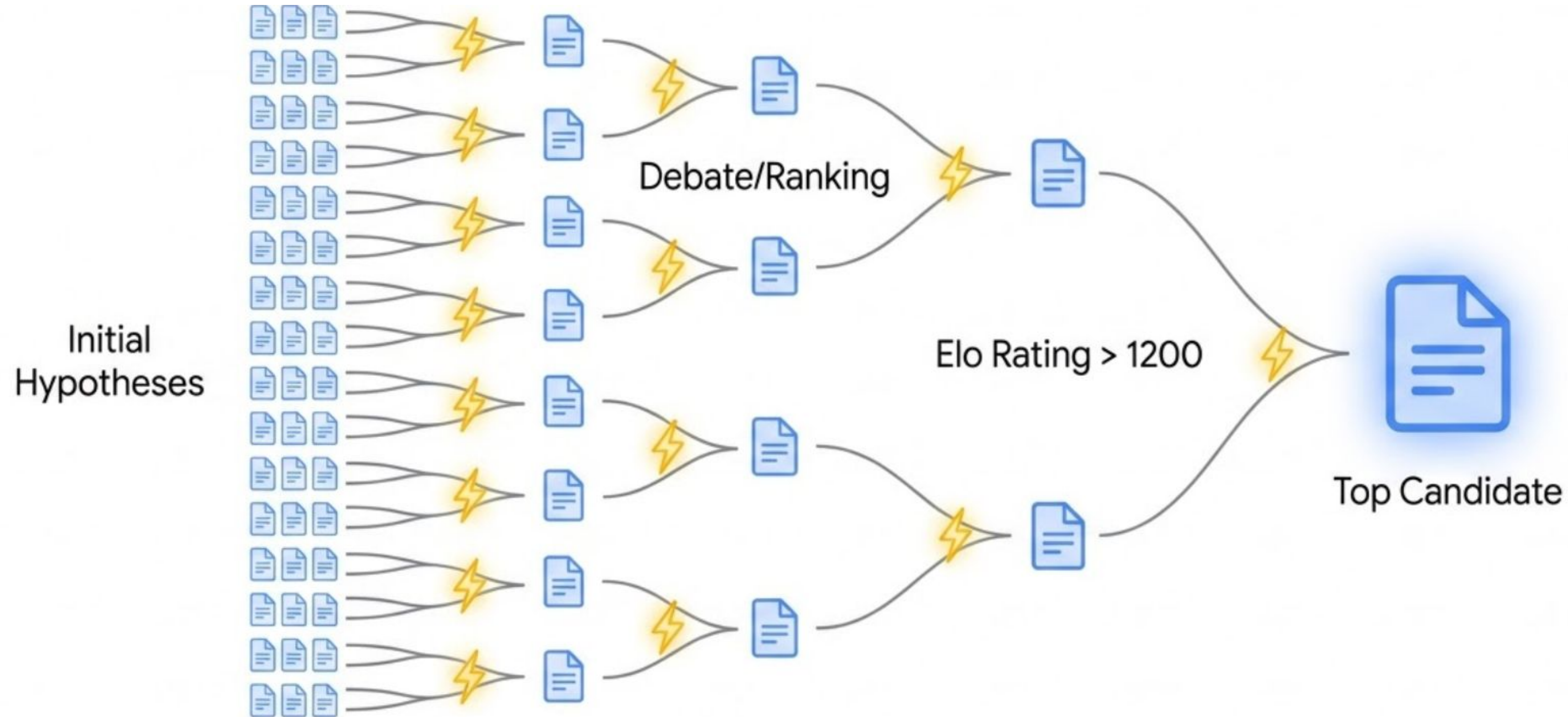
3. Bounds

● **Preferences:** High novelty, Low cost.

4. Ranking Criteria

Co-Scientist

Dozens of ideas that enter a tournament



Thousands of simulated iterations happen before the user sees a single result.

Co-Scientist

Validated in the lab



AML Drug Repurposing

3 of 5

Candidates tested killed AML cells at clinical concentrations.



Liver Fibrosis

Proposed drugs showed significant anti-fibrotic activity in human organoids.



Antimicrobial Resistance

Independently invented a validated hypothesis for resistance mechanisms.

Thank you

