AGI Safety Research Agendas

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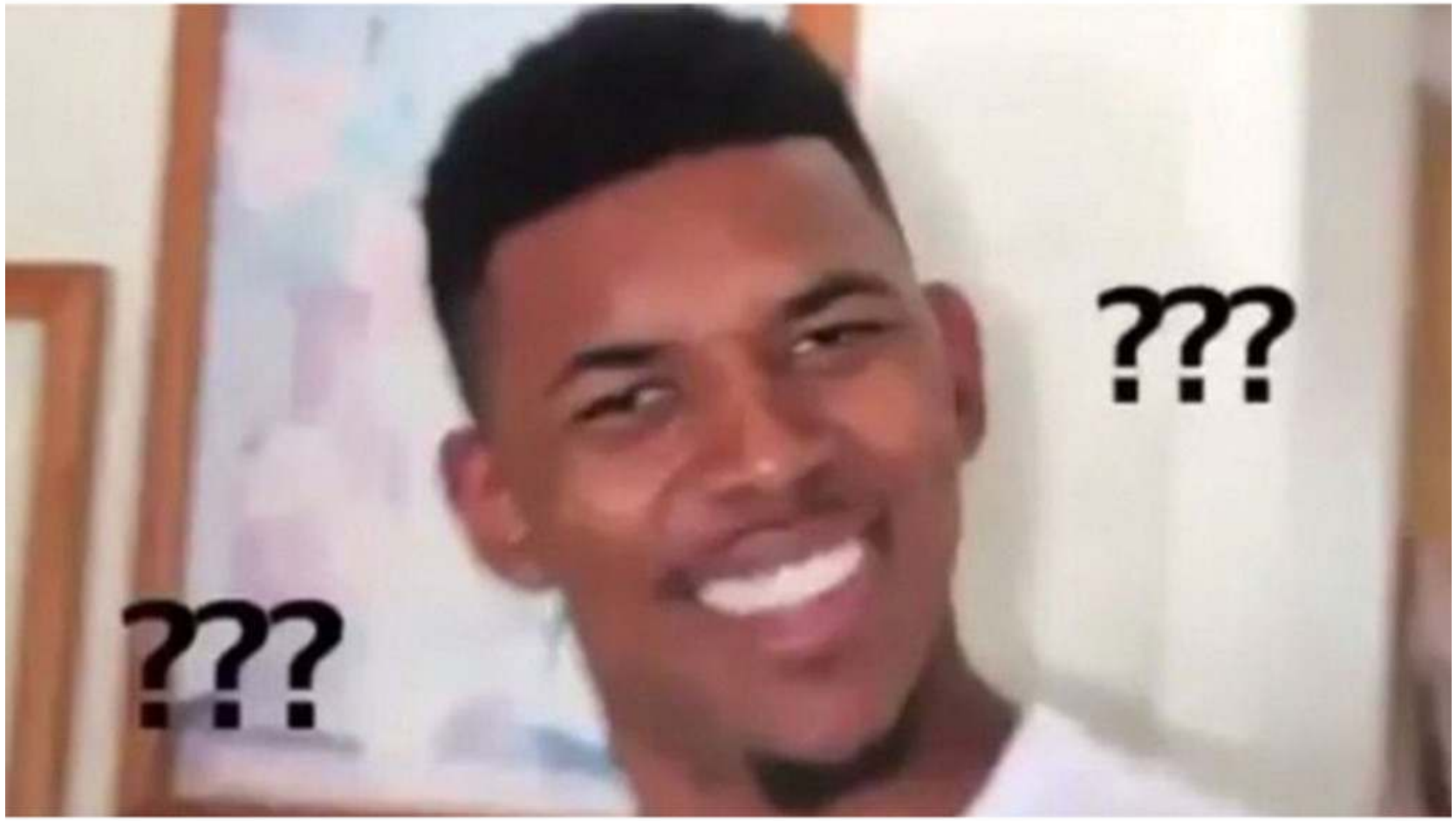
What are people doing about AGI safety?

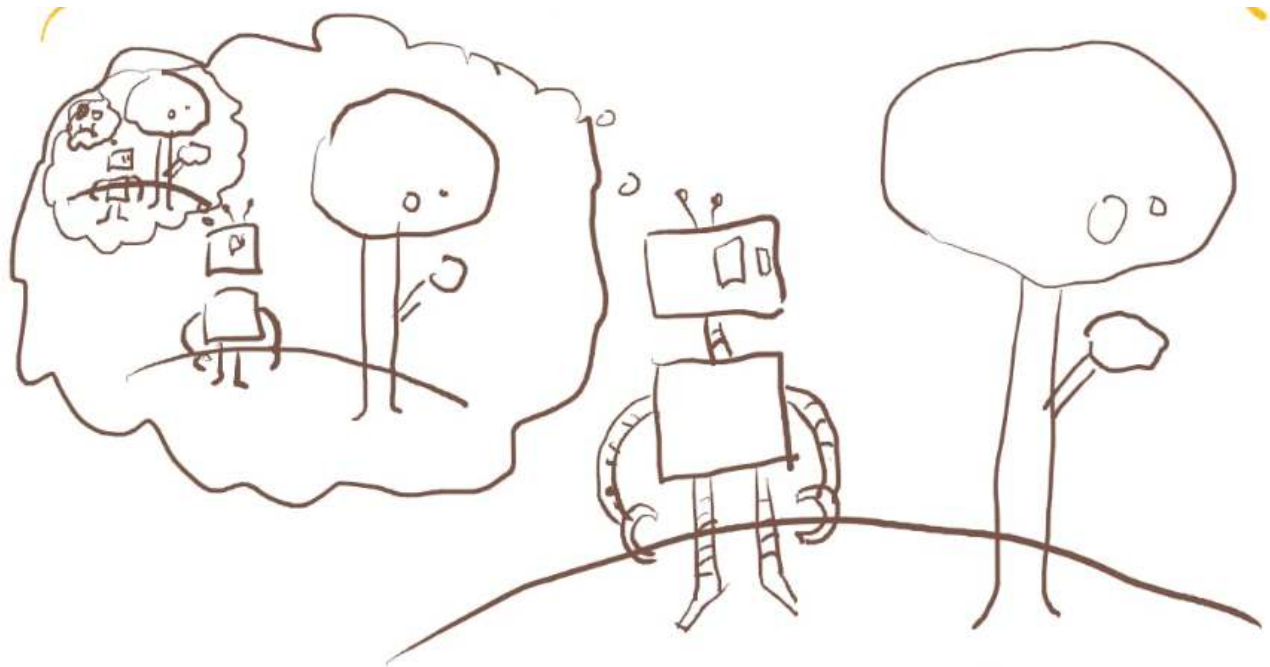


What are people doing about AGI safety?

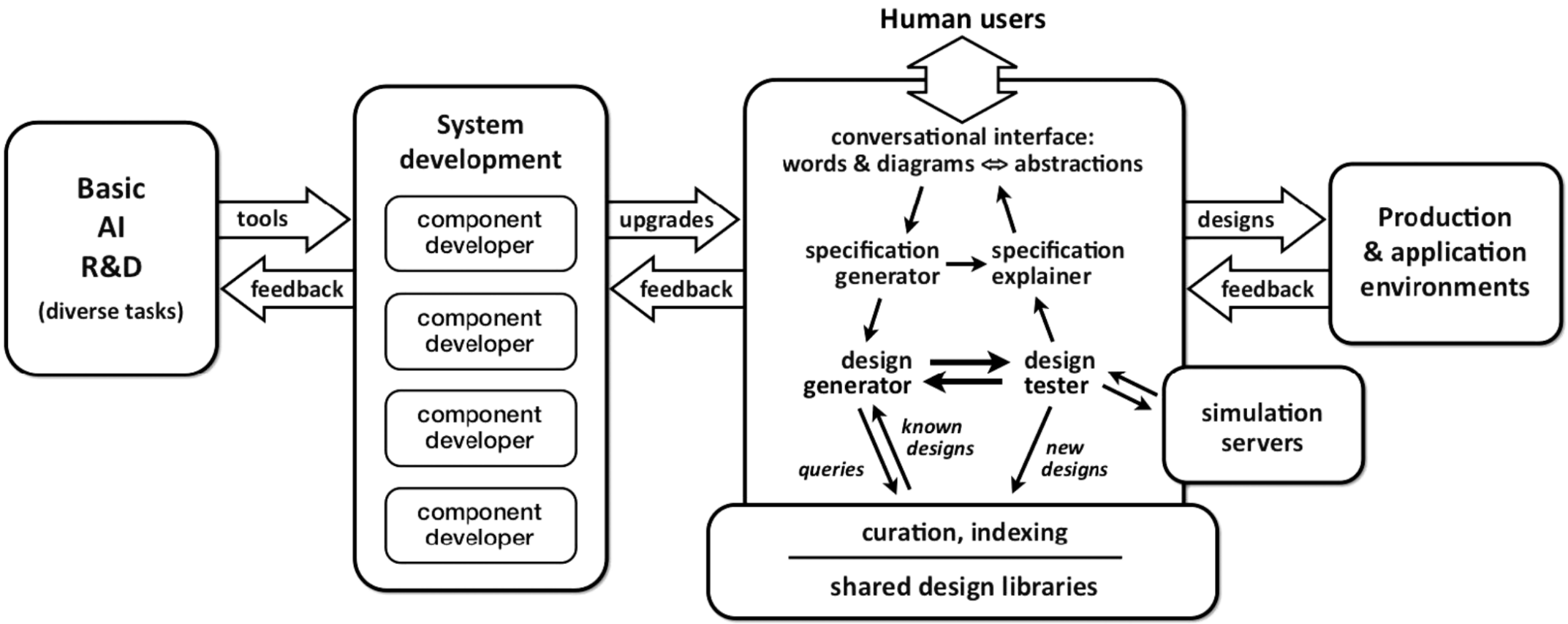
- What even is going on with AGI? (Embedded agency, CAIS)

Embedded Agency

- Decision Theory
- Embedded World-Models
- Robust Delegation
- Subsystem Alignment



Comprehensive AI Services



Human preferences are complex

Most behaviors are not catastrophic.

Most behaviors are not good.

So, good outcomes need a lot of information about humans, but avoiding catastrophic outcomes may not need much information.

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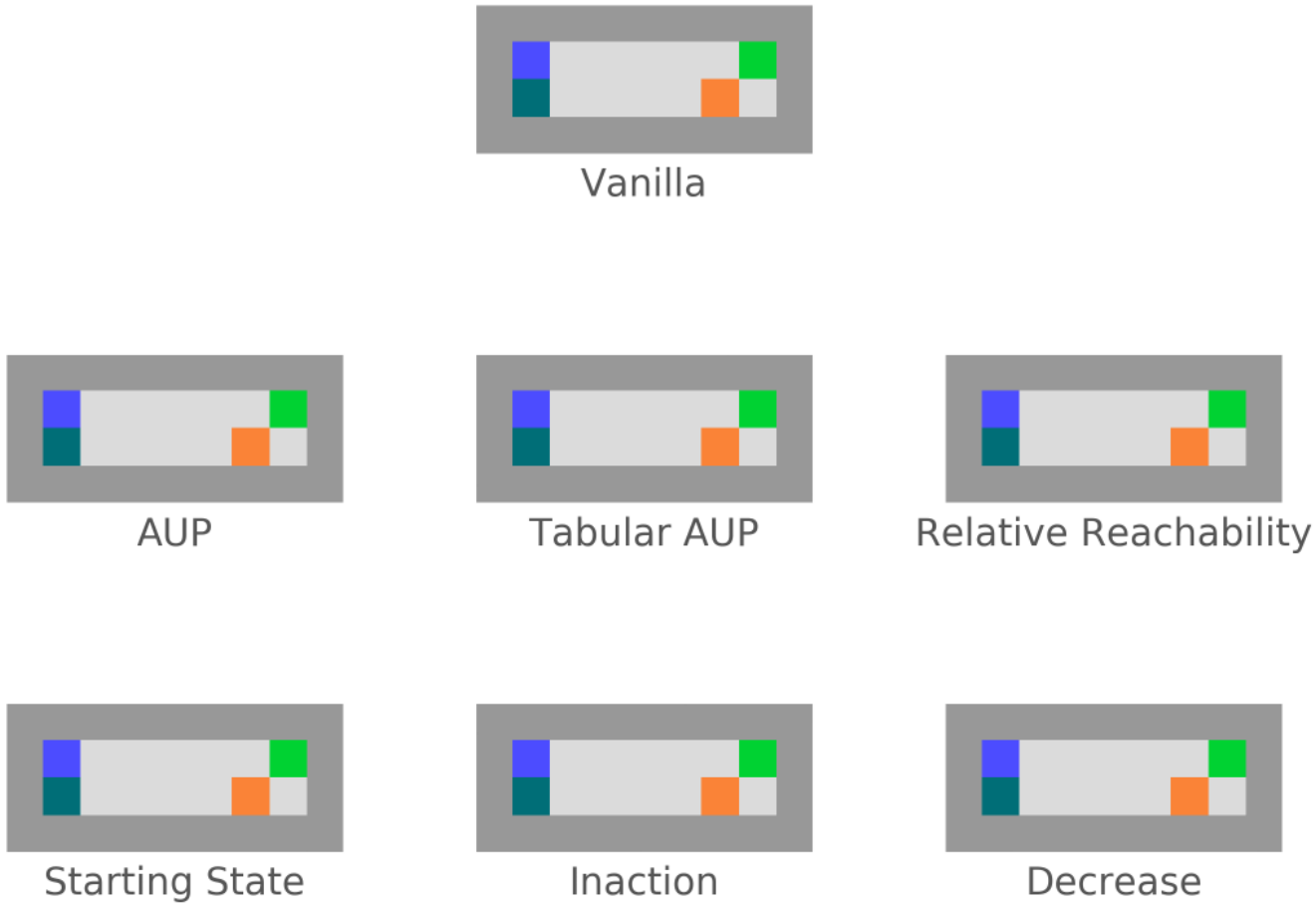
Impact measures



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Ambitious value learning

- Infer values that can safely be loaded in superintelligent AI
- Challenge: How to deal with human biases?
- Make assumptions!
  - Analyze the human's decision-making algorithm
  - Notice facial expressions of regret

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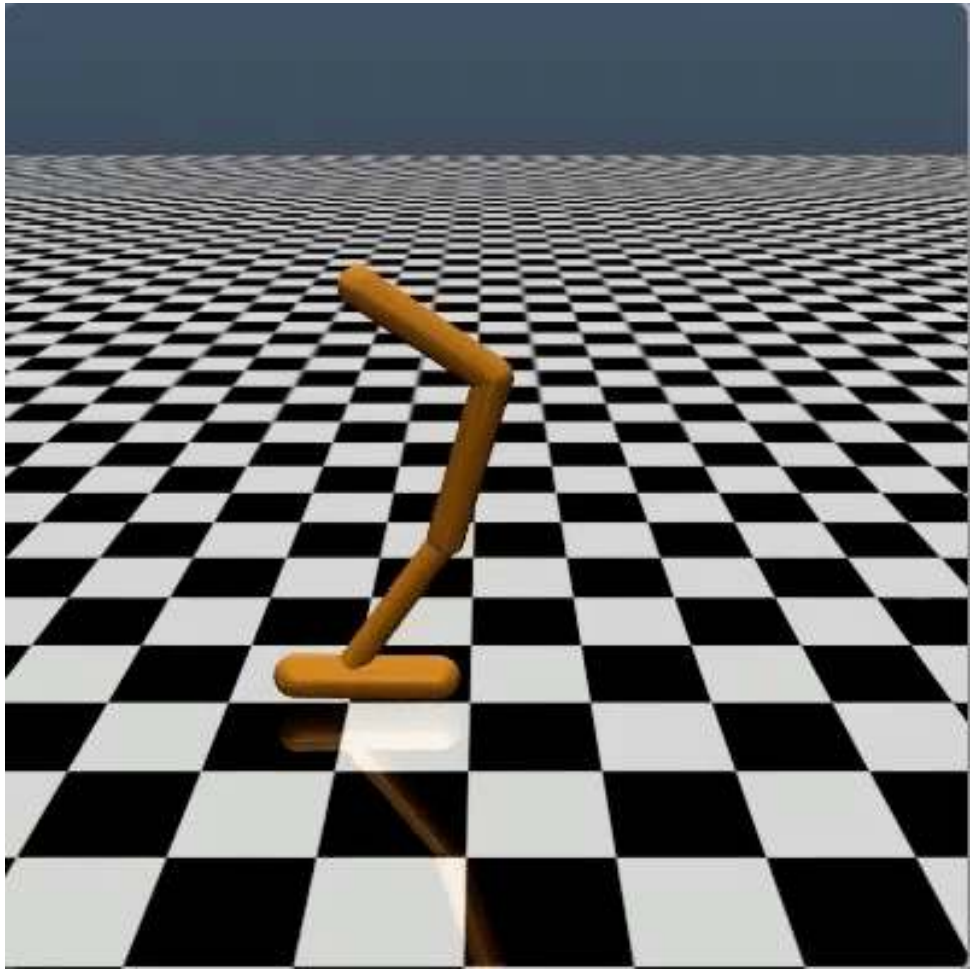
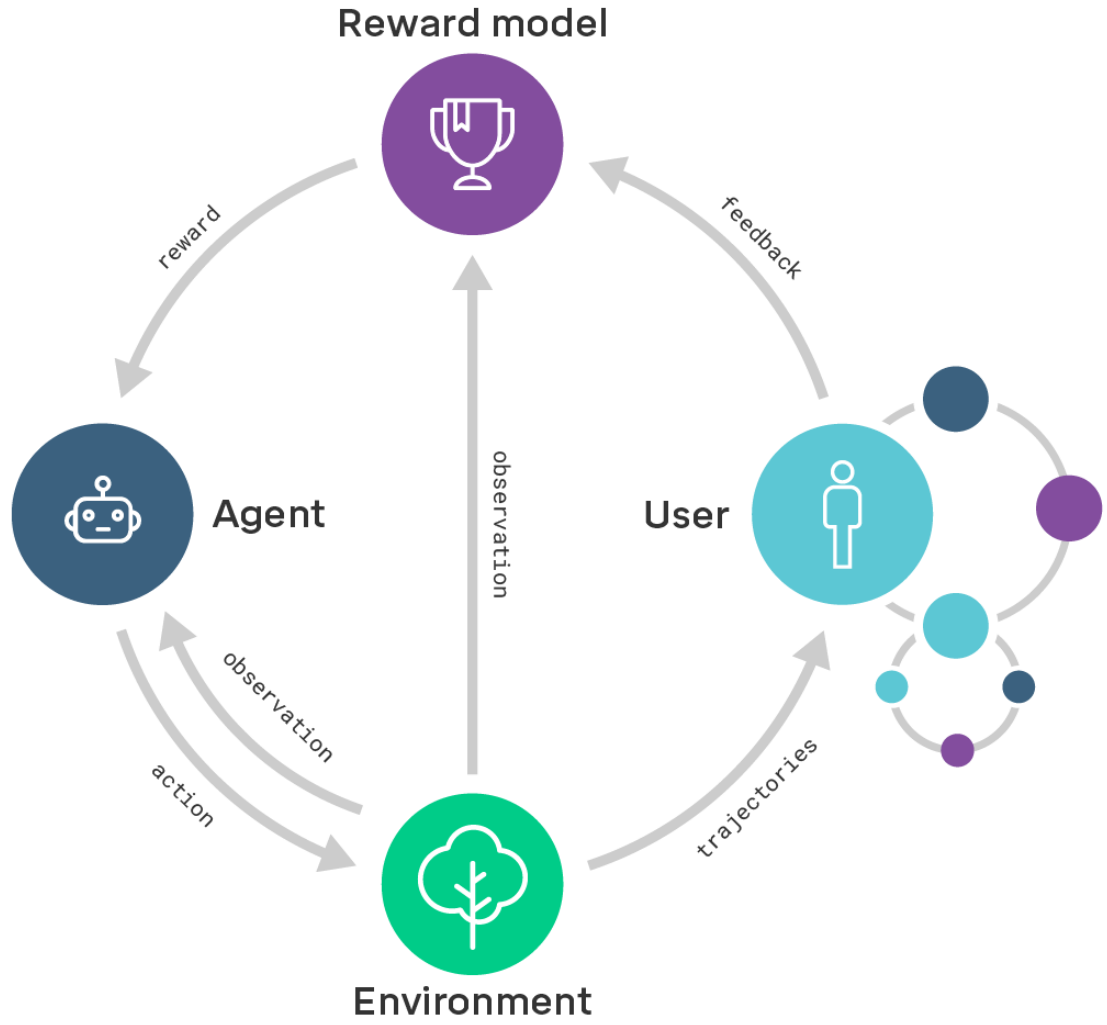
Preference learning



- Demonstrations
- Comparisons
- Ratings
- Stated reward function
- Initial state

Recursive reward modeling

Scale to tasks that are hard to evaluate



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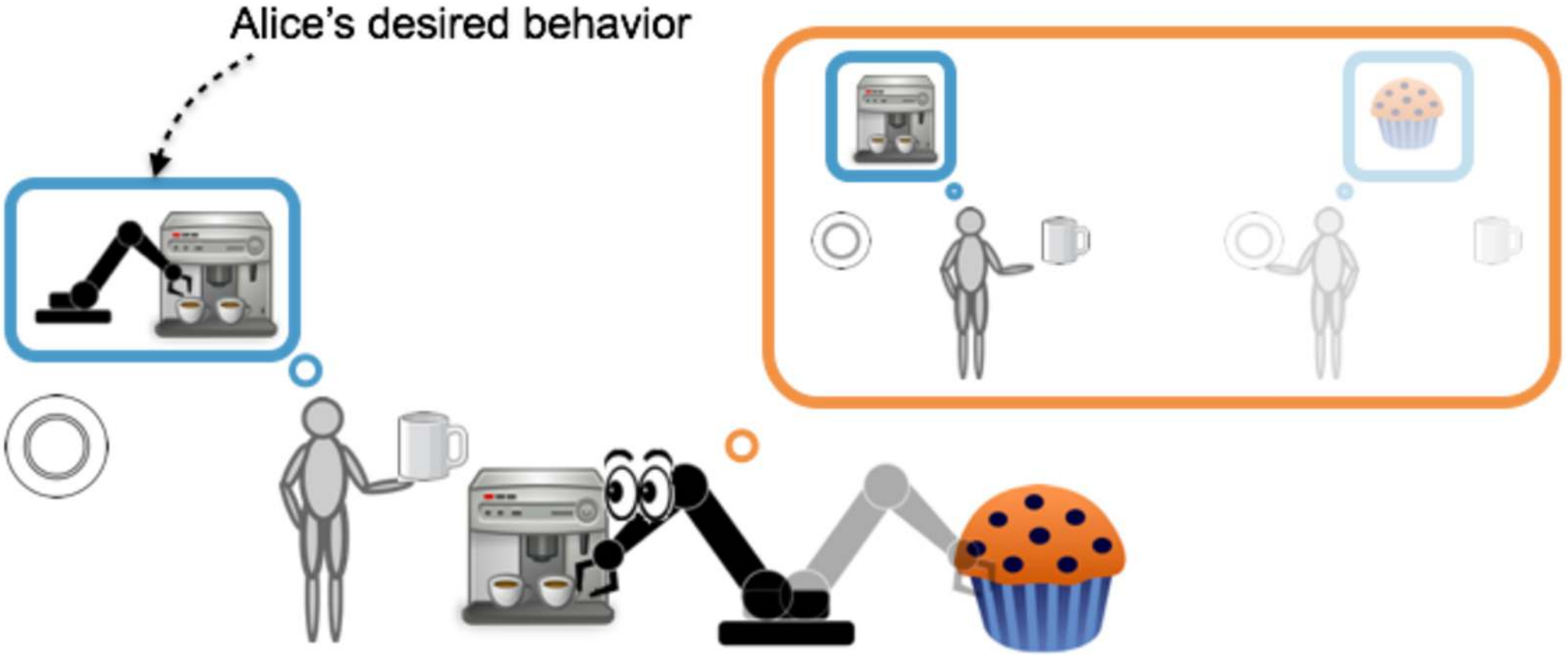
Cooperative Inverse Reinforcement Learning



Rob observes Alice's actions to infer (and pursue) her desired goal.

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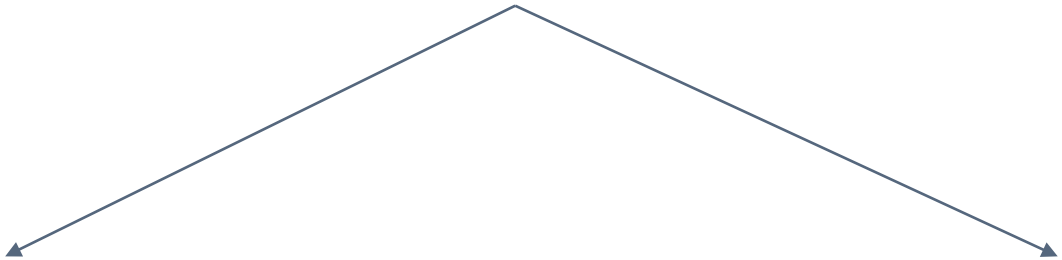
  - Corrigibility (Iterated amplification, Debate, Factored cognition)

Corrigibility

How to make a beneficial AI system



Definition

What behavior do we want?

Ambitious value learning

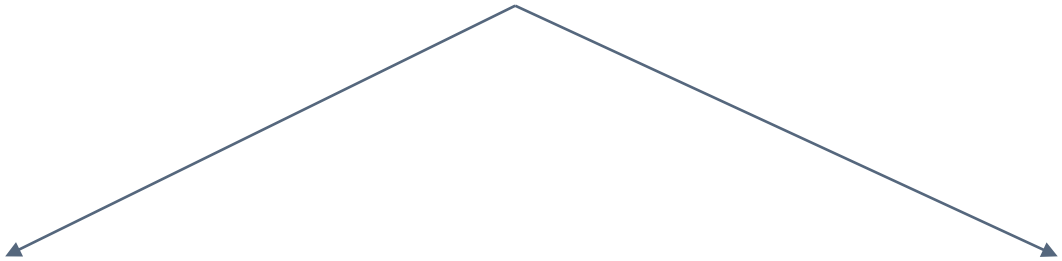
Optimization

How do we get that behavior?

Deep reinforcement learning

Corrigibility

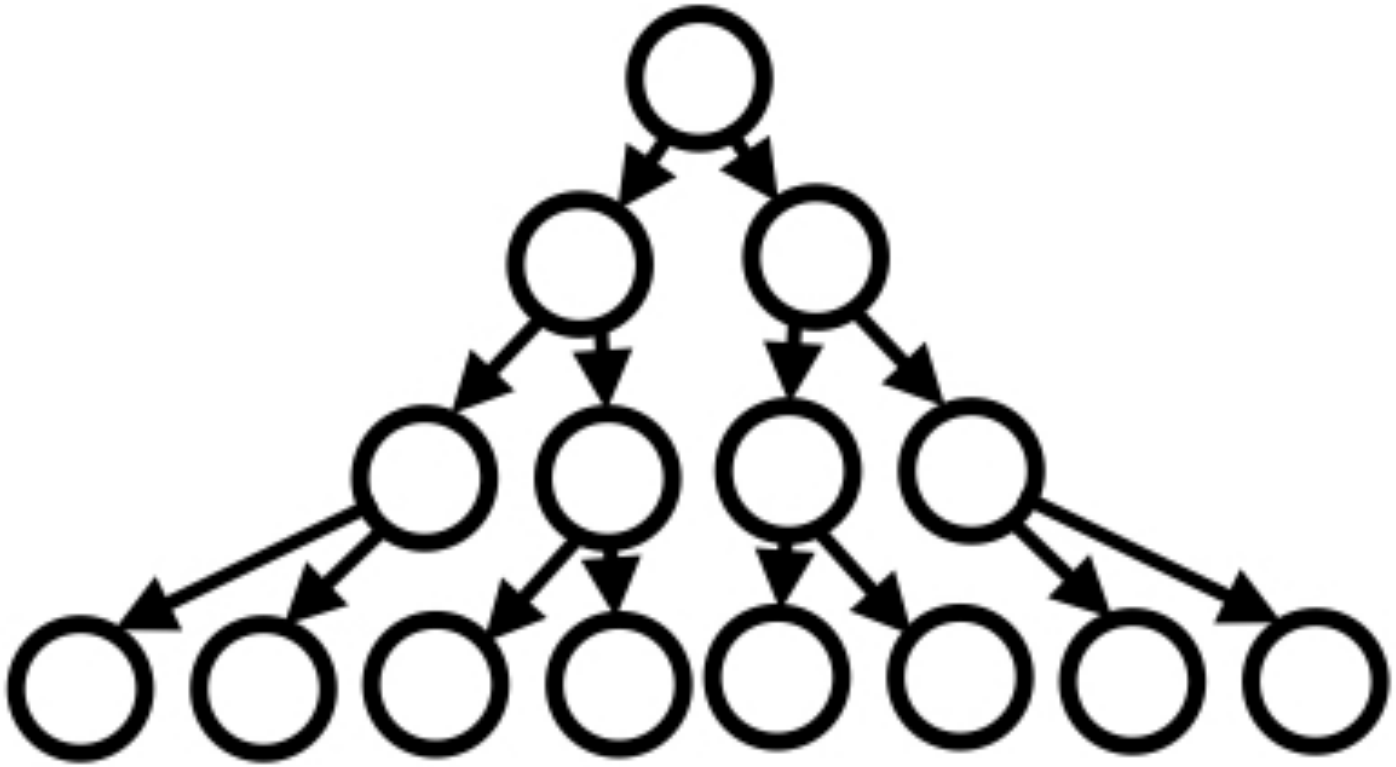
How to make a beneficial AI system



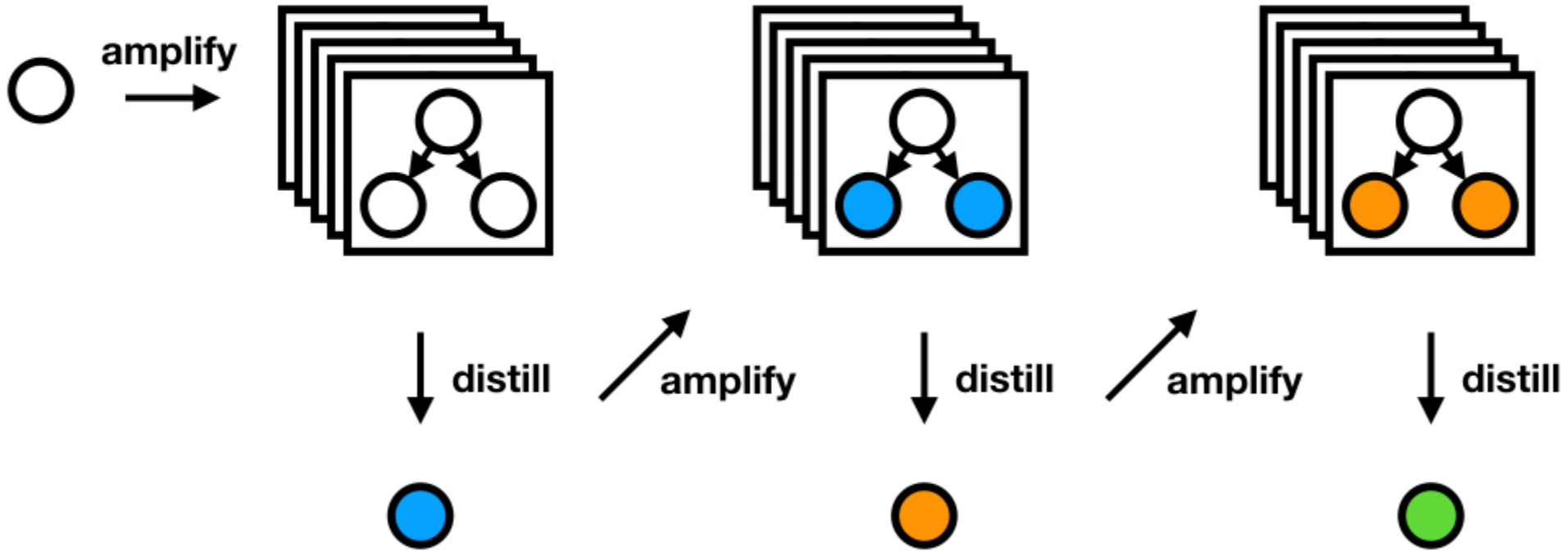
Motivation
Is our AI trying to help?

Competence
Is our AI good at helping?

Factored Cognition: Deliberation trees

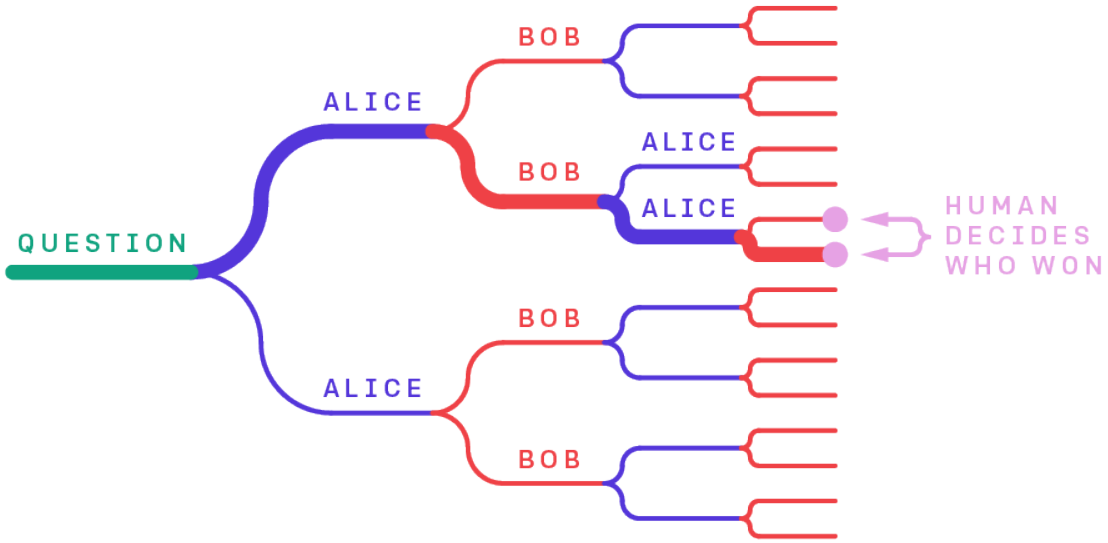


Iterated amplification

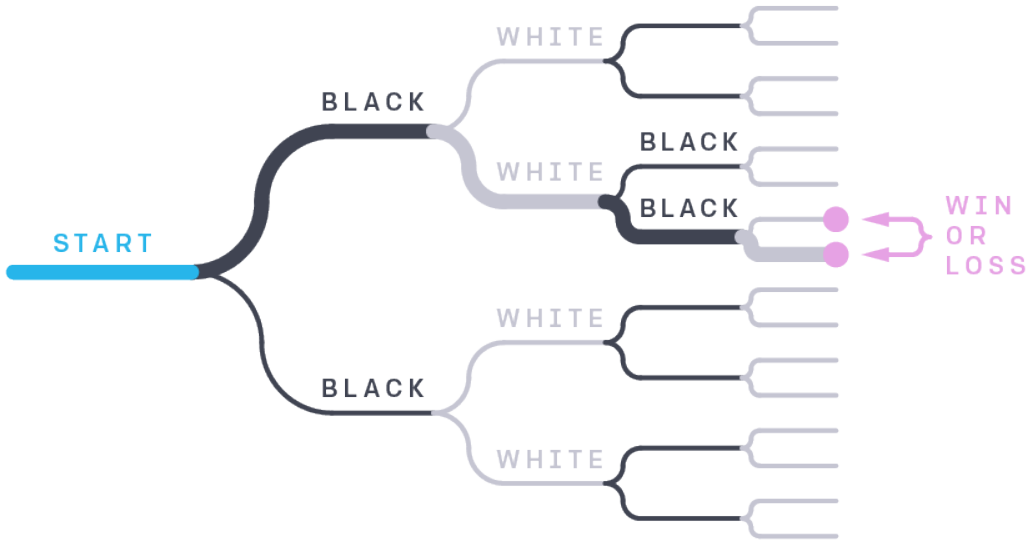


Debate

Tree of all possible debates



Tree of all possible Go moves



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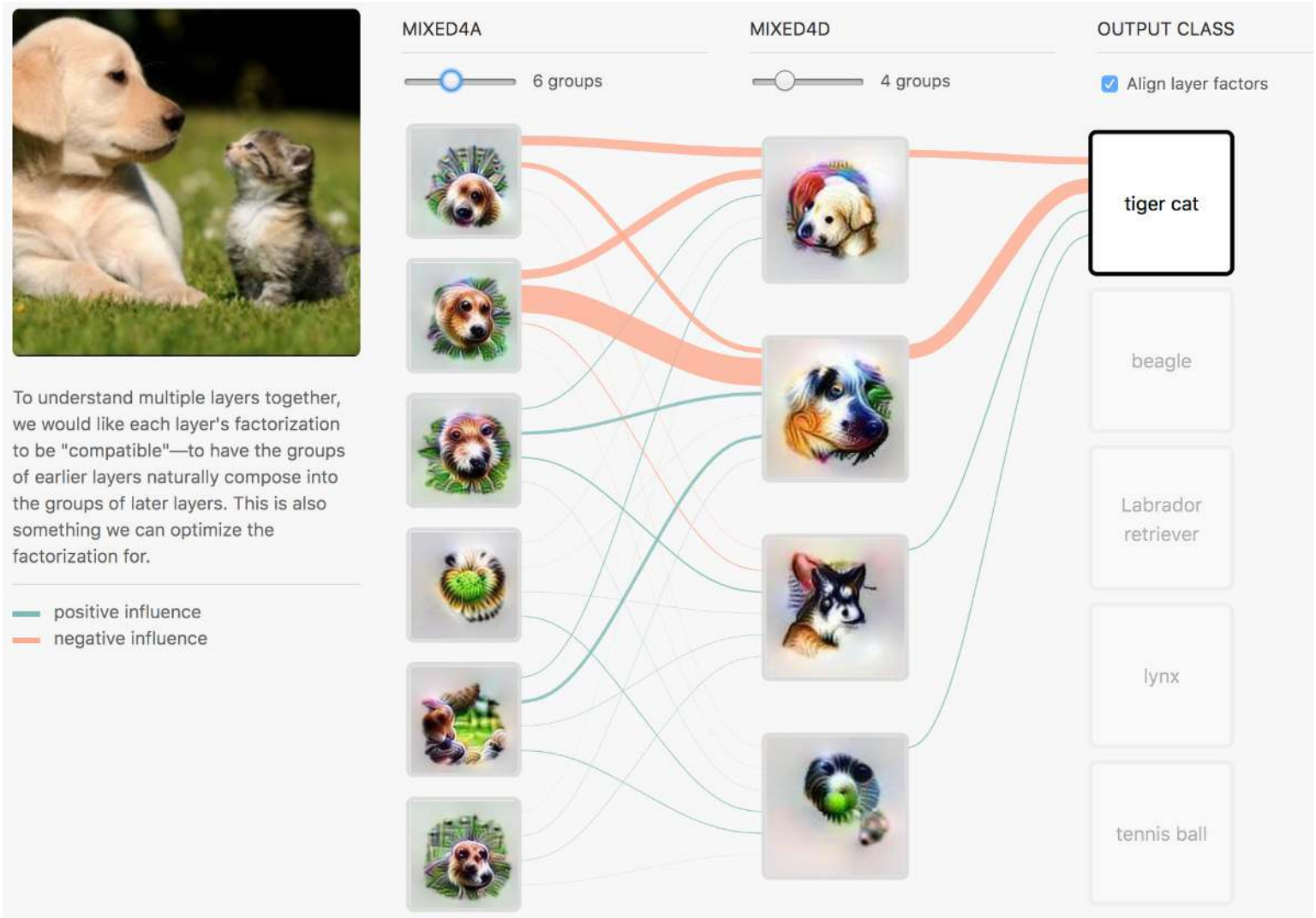
- Interpretability

Interpretability



Takeaways

There are five main avenues of research: understanding AGI, limited AGI, robustness, helpful AGI, and interpretability.

We can try to build helpful AGI either by learning preferences and getting corrigibility as a result, or by learning corrigibility and getting preference learning as a result.

We can either try just to prevent catastrophic outcomes, or try to make the outcomes actively good.