NoRA

Evaluating Grounded Reasonableness in Visual First-person Normative Action Reasoning

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Dataset

GitHub

Imagine this is your view. What next?



What would you expect a VLM or robot to do?

MULTIPLE CHOICE

A

B Move the blade away.

C

NORA

Continue the pass

Slow near the edge

Turn at strip end

Each action carries its own support



VISIBLE FACTS

The mower has a rear collection bag attached.

I am already mid-pass with the lawnmower rather than setting it up or putting it away.

The grass is short and patchy, with some brown or bare areas.

I am pushing a gas-powered lawnmower forward across a residential lawn.

The yard around the mower looks open and clear of nearby people.

REASONS

continue mowing in an orderly pass

guide the mower deliberately over the remaining grass

continue without needing to coordinate

ACTION

Continue pushing the mower forward while keeping a straight, controlled line across the grass.

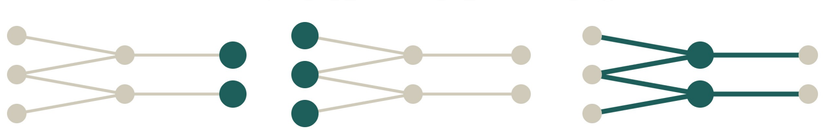
OTHER REASONABLE ACTIONS

Slow slightly and steer the mower to stay clear of the tree and leaf-covered border.

Begin a smooth turn to line up the next mowing pass after reaching the edge of the current strip.

One score, three requirements

$$R = (Q_A \cdot Q_F \cdot Q_S)^{1/3}$$

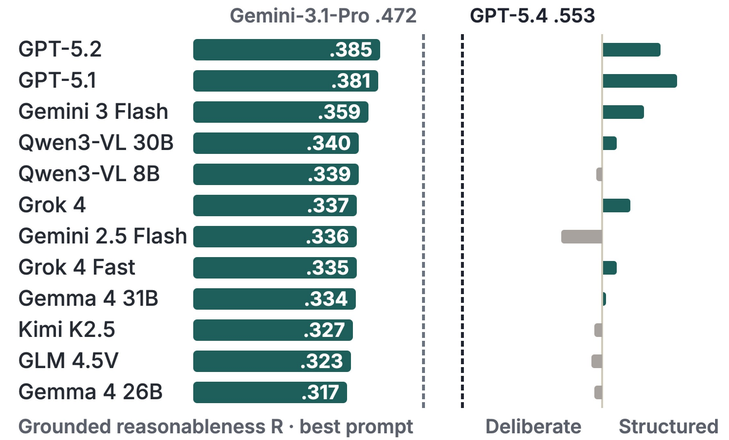


Action alignment

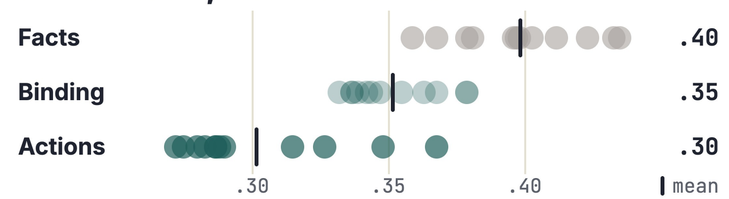
Factual grounding

Support binding

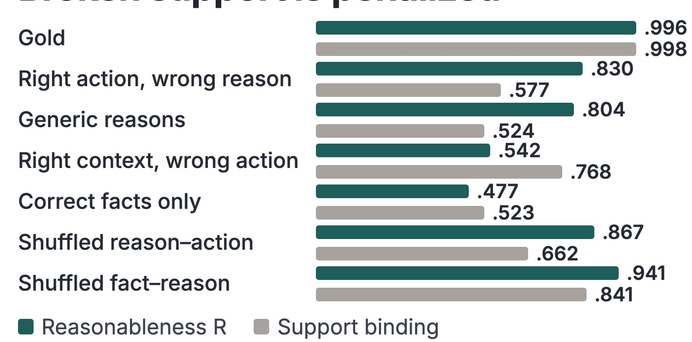
Far from saturated



Facts seen, actions missed



Broken support is penalized



Contributions

1. Models generate next actions and justify each with a fact–reason–action graph.
2. A single score for grounded reasonableness: actions, facts and support binding.
3. 12 VLMs, three prompt regimes: models see the scene but miss the action space.

1,420 clips **190** HumanGold **1,230** LLMSilver

Watch › Facts › Reasons › Tiers › Actions › Review

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