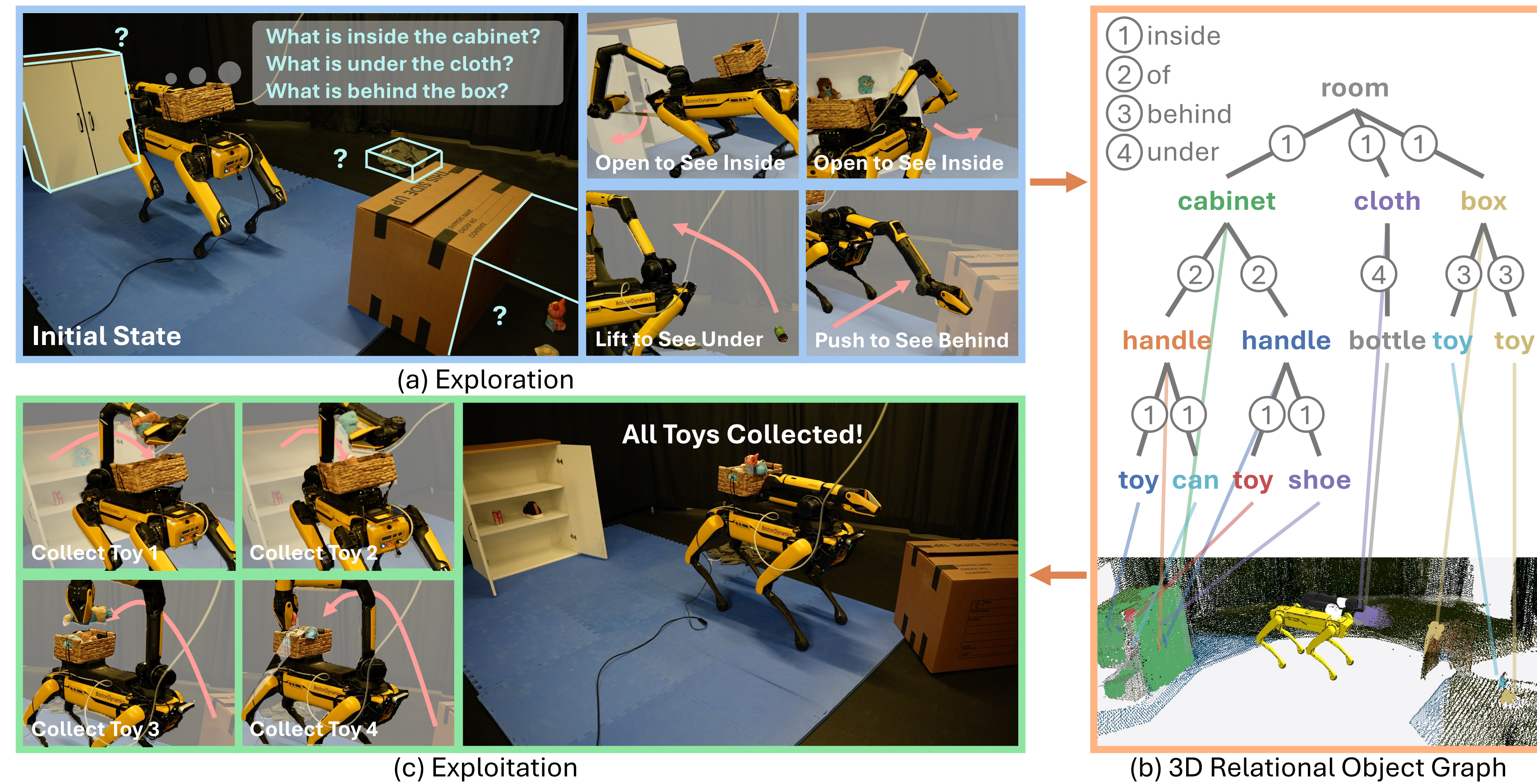


CuriousBot: Interactive Mobile Exploration via Actionable 3D Relational Object Graph

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Introduction

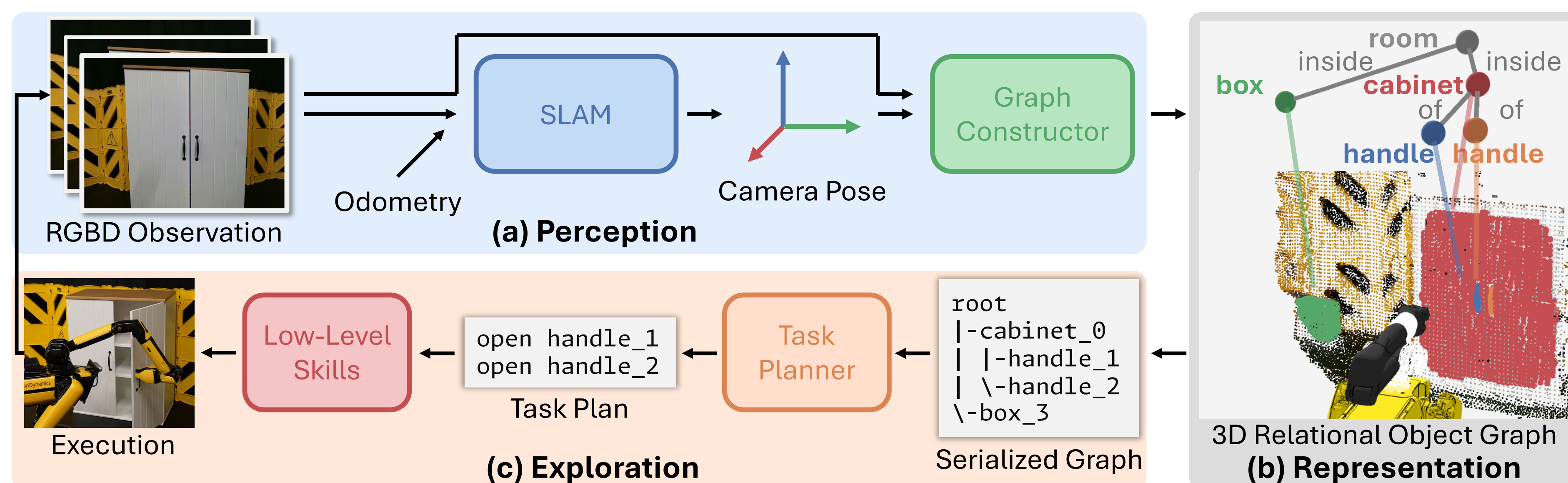
- Mobile interactive exploration is essential for robot to understand the environment.
- Existing mobile exploration focuses on *active perception* instead of *action interaction*.
- Existing interactive exploration focuses on tabletop scenes instead of mobile settings.



Contributions

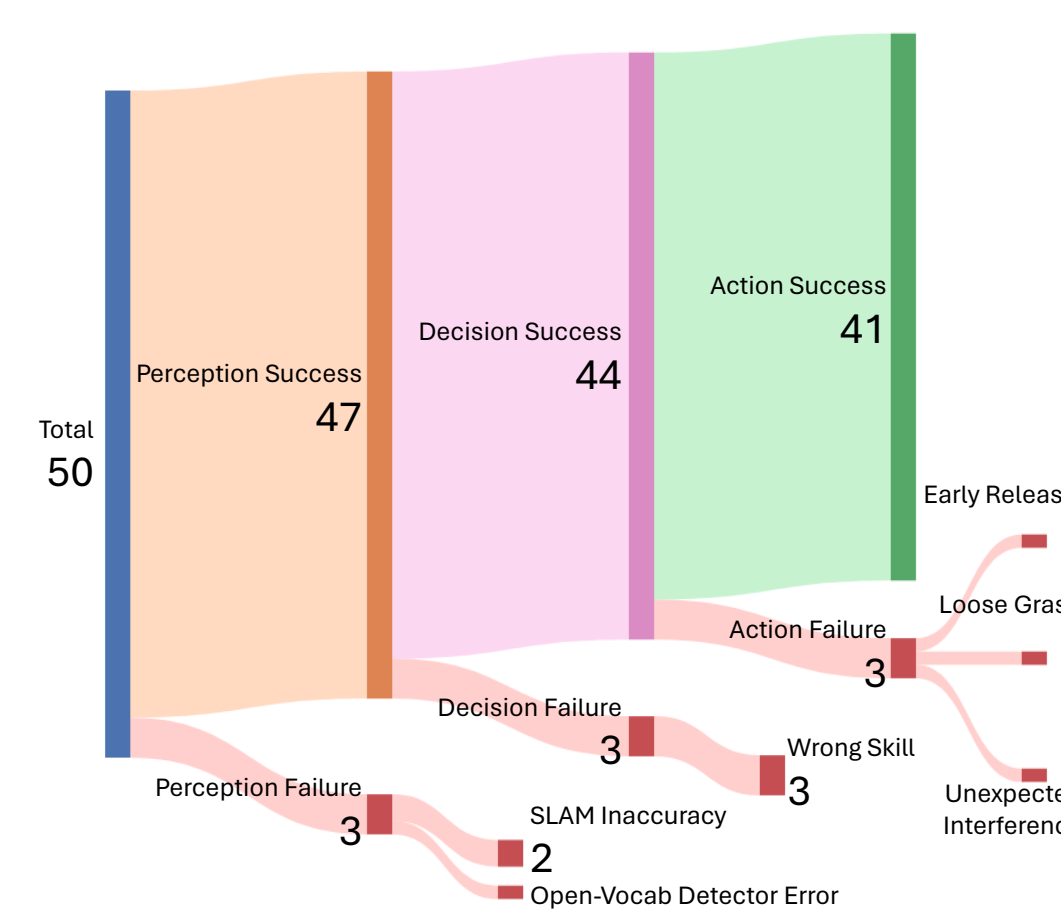
- Introduce the 3D relational object graph encoding common object relations.
- Develop the CuriousBot system, which can interactively explore the environment.
- Conduct comprehensive qualitative and quantitative experiments.

Method



Quantitative Analysis

	LLaVa	Gemini	GPT-4o	Heuristics	Ours
Success ↑	22%	32%	32%	12%	82%
OR ↑	26%	34%	36%	14.4%	81.6%
GED ↓	3.62	3.42	3.32	2.86	1.28



Diverse Exploration Scenes and Skills

