1. Detailed comparison with more related work

We compare OctoTools with the related works as suggested by the reviewers in Table 1.

	Training-Free	Dynamic Planning	Self-Refinement	Toolset Optimization	Extensible Tools	Runnable System	Comprehensive Evaluations	In-depth Study
OctoTools (ours)	✓	✓	✓	✓	✓	✓	✓, 16 tasks	✓
AutoGen	✓	✓	✗	✗	✓	✓	✗, 0 task	✗
GPT-Functions	✓	✓	✗	✗	✓	Limited	✗, 0 task	✗
LangChain	✓	✓	✓	✗	✓	✓	✗, 0 task	✗
EcoAct (Zhang et al., 2024)	✓	✓	✓	✗	✗	✗	✗, 1 task only	Limited
TPTU-v2 (Kong et al., 2023)	✗	✗	✗	✓	Limited	✗	✗, 1 task only	Limited
HuggingGPT (Shen et al., 2023)	✓	✗	✗	✗	✗	✗	✗, 0 task	✗
TaskMatrix.AI (Liang et al., 2024)	✗	✗	✗	✗	✗	✗	✗, 0 task	✗
Magnetic-One (Fourney et al., 2024)	✓	✓	✗	✗	✓	✓	✗, 2 tasks only	✗
AutoAgents (Chen et al., 2023)	✗	✗	✗	✗	✗	✗	✗, 2 tasks only	✗

Table 1. Comparison with more existing works.

Notations:

- **Training-free:** The framework can be deployed or extended with new tools without any additional training or fine-tuning of the language model.
- **Dynamic planning:** The system adaptively updates or refines its plan (including tool usage) based on intermediate observations or feedback during the reasoning process.
- **Self-refinement:** At each step, the agent can correct or refine its previous reasoning to address errors, inconsistencies, or missing information in earlier steps.
- **Toolset optimization:** There is an explicit mechanism (e.g., a lightweight selection algorithm) that identifies the most useful subset of tools for a given domain or task, with the guarantee of the performance gain based on the validation.
- **Extensible tools:** A wide range of tools (e.g., Python, web-search, vision models) can be added via standardized interfaces ("tool cards"). Introducing a new tool does not require changes to the core planner–executor logic.
- **Runnable system:** A publicly accessible or easily deployable agentic framework is provided so that others can run, test, and build upon it for research or practical applications.
- **Comprehensive evaluations:** The framework is rigorously tested on diverse and challenging benchmarks (OctoTools demonstrates results on **16 tasks**), showcasing consistent gains and broad generalization.
- **In-depth study:** Thorough analyses and ablations are presented (e.g., on multi-step reasoning, task planning, tool usage) that offer insights into the system's capabilities, limitations, and design trade-offs, along with the behavior difference over other frameworks.

To sum up, while OctoTools shares the broad concept of "planner–executor" with past works, our training-free nature, self-refinement loop, lightweight toolset optimization, and in-depth benchmarking offer distinct contributions that go beyond traditional approaches like TPTU-v2. We hope this clarifies how our system expands the boundaries of agentic tool usage and provides a fresh perspective on designing robust, extensible frameworks for complex reasoning.

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