

REFERENCES

- Anthropic. Claude 3.5 sonnet. <https://www.anthropic.com/news/claude-3-5-sonnet>, 2024.
- Anthropic. Claude opus 4. <https://www.anthropic.com/clause/opus>, 2025a.
- Anthropic. Claude sonnet 4. <https://www.anthropic.com/clause/sonnet>, 2025b.
- ByteDance. Doubao 1.6. https://seed.bytedance.com/en/seed1_6, 2025.
- Zijian Chen, Xueguang Ma, Shengyao Zhuang, Ping Nie, Kai Zou, Andrew Liu, Joshua Green, Kshama Patel, Ruoxi Meng, Mingyi Su, et al. Browsecocom-plus: A more fair and transparent evaluation benchmark of deep-research agent. *arXiv preprint arXiv:2508.06600*, 2025.
- DeepSeek. Deepseek-chat. <https://huggingface.co/deepseek-ai/DeepSeek-V3>, 1, 2025a.
- DeepSeek. DeepSeek-R1. <https://huggingface.co/deepseek-ai/DeepSeek-R1>, 2025b.
- Xinyu Geng, Peng Xia, Zhen Zhang, Xinyu Wang, Qiuchen Wang, Ruixue Ding, Chenxi Wang, Jialong Wu, Yida Zhao, Kuan Li, et al. Webwatcher: Breaking new frontiers of vision-language deep research agent. *arXiv preprint arXiv:2508.05748*, 2025.
- Google. Gemini 2.5: Our most intelligent ai model. <https://blog.google/technology/google-deepmind/gemini-model-thinking-updates-march-2025/>, 2025a.
- Google. Gemini deep research. <https://gemini.google/overview/deep-research/>, 2025b.
- Sirui Hong, Yizhang Lin, Bang Liu, Bangbang Liu, Biniao Wu, Ceyao Zhang, Chenxing Wei, Danyang Li, Jiaqi Chen, Jiayi Zhang, et al. Data interpreter: An llm agent for data science. *arXiv preprint arXiv:2402.18679*, 2024a.
- Sirui Hong, Mingchen Zhuge, Jonathan Chen, Xiawu Zheng, Yuheng Cheng, Jinlin Wang, Ceyao Zhang, Zili Wang, Steven Ka Shing Yau, Zijuan Lin, Liyang Zhou, Chenyu Ran, Lingfeng Xiao, Chenglin Wu, and Jürgen Schmidhuber. MetaGPT: Meta programming for a multi-agent collaborative framework. In *The Twelfth International Conference on Learning Representations*, 2024b. URL <https://openreview.net/forum?id=VtmBAGCN7o>.
- Bowen Jin, Hansi Zeng, Zhenrui Yue, Jinsung Yoon, Sercan Arik, Dong Wang, Hamed Zamani, and Jiawei Han. Search-r1: Training llms to reason and leverage search engines with reinforcement learning. *arXiv preprint arXiv:2503.09516*, 2025.
- Boyan Li, Chong Chen, Zhujun Xue, Yinan Mei, and Yuyu Luo. Deepeye-sql: A software-engineering-inspired text-to-sql framework. *arXiv preprint arXiv:2510.17586*, 2025a.
- Boyan Li, Jiayi Zhang, Ju Fan, Yanwei Xu, Chong Chen, Nan Tang, and Yuyu Luo. Alpha-sql: Zero-shot text-to-sql using monte carlo tree search. *arXiv preprint arXiv:2502.17248*, 2025b.
- Kuan Li, Zhongwang Zhang, Huirong Yin, Liwen Zhang, Litu Ou, Jialong Wu, Wenbiao Yin, Baixuan Li, Zhengwei Tao, Xinyu Wang, et al. Websailor: Navigating super-human reasoning for web agent. *arXiv preprint arXiv:2507.02592*, 2025c.
- Shilong Li, Xingyuan Bu, Wenjie Wang, Jiaheng Liu, Jun Dong, Haoyang He, Hao Lu, Haozhe Zhang, Chenchen Jing, Zhen Li, et al. Mm-browsecocom: A comprehensive benchmark for multimodal browsing agents. *arXiv preprint arXiv:2508.13186*, 2025d.
- Xinbin Liang, Jinyu Xiang, Zhaoyang Yu, Jiayi Zhang, Sirui Hong, Sheng Fan, and Xiao Tang. Openmanus: An open-source framework for building general ai agents, 2025.
- Bang Liu, Xinfeng Li, Jiayi Zhang, Jinlin Wang, Tanjin He, Sirui Hong, Hongzhang Liu, Shaokun Zhang, Kaitao Song, Kunlun Zhu, et al. Advances and challenges in foundation agents: From brain-inspired intelligence to evolutionary, collaborative, and safe systems. *arXiv preprint arXiv:2504.01990*, 2025a.

Junteng Liu, Yunji Li, Chi Zhang, Jingyang Li, Aili Chen, Ke Ji, Weiyu Cheng, Zijia Wu, Chengyu Du, Qidi Xu, et al. Webexplorer: Explore and evolve for training long-horizon web agents. *arXiv preprint arXiv:2509.06501*, 2025b.

Grégoire Mialon, Clémentine Fourrier, Thomas Wolf, Yann LeCun, and Thomas Scialom. Gaia: a benchmark for general ai assistants. In *The Twelfth International Conference on Learning Representations*, 2023.

Moonshot AI. Kimi K2. <https://moonshotai.github.io/Kimi-K2/>, 2025.

OpenAI. Hello GPT-4o. <https://openai.com/index/hello-gpt-4o/>, 2024a.

OpenAI. GPT-4o mini: Advancing cost-efficient intelligence. <https://openai.com/index/gpt-4o-mini-advancing-cost-efficient-intelligence/>, 2024b.

OpenAI. Introducing GPT-4.1. <https://openai.com/index/gpt-4-1/>, 2025a.

OpenAI. Introducing GPT-5. <https://openai.com/index/introducing-gpt-5/>, 2025b.

OpenAI. Introducing openai o3 and o4-mini. <https://openai.com/index/introducing-o3-and-o4-mini/>, 2025c.

OpenAI. Introducing deep research. <https://openai.com/index/introducing-deep-research/>, 2025d.

Cheng Qian, Bingxiang He, Zhong Zhuang, Jia Deng, Yujia Qin, Xin Cong, Zhong Zhang, Jie Zhou, Yankai Lin, Zhiyuan Liu, et al. Tell me more! towards implicit user intention understanding of language model driven agents. *arXiv preprint arXiv:2402.09205*, 2024.

Cheng Qian, Zuxin Liu, Akshara Prabhakar, Zhiwei Liu, Jianguo Zhang, Haolin Chen, Heng Ji, Weiran Yao, Shelby Heinecke, Silvio Savarese, et al. Userbench: An interactive gym environment for user-centric agents. *arXiv preprint arXiv:2507.22034*, 2025a.

Cheng Qian, Zuxin Liu, Akshara Prabhakar, Jielin Qiu, Zhiwei Liu, Haolin Chen, Shirley Kokane, Heng Ji, Weiran Yao, Shelby Heinecke, et al. Userrl: Training interactive user-centric agent via reinforcement learning. *arXiv preprint arXiv:2509.19736*, 2025b.

Qwen Team. Qwen3-235B-A22B. <https://arxiv.org/abs/2505.09388>, 2025.

Huatong Song, Jinhao Jiang, Yingqian Min, Jie Chen, Zhipeng Chen, Wayne Xin Zhao, Lei Fang, and Ji-Rong Wen. R1-searcher: Incentivizing the search capability in llms via reinforcement learning. *arXiv preprint arXiv:2503.05592*, 2025.

Fengwei Teng, Zhaoyang Yu, Quan Shi, Jiayi Zhang, Chenglin Wu, and Yuyu Luo. Atom of thoughts for markov llm test-time scaling. *arXiv preprint arXiv:2502.12018*, 2025.

Jason Wei, Zhiqing Sun, Spencer Papay, Scott McKinney, Jeffrey Han, Isa Fulford, Hyung Won Chung, Alex Tachard Passos, William Fedus, and Amelia Glaese. Browsecmp: A simple yet challenging benchmark for browsing agents. *arXiv preprint arXiv:2504.12516*, 2025.

xAI. Grok 4. <https://x.ai/news/grok-4>, 2025.

An Yang, Baosong Yang, Beichen Zhang, Binyuan Hui, Bo Zheng, Bowen Yu, Chengyuan Li, Dayiheng Liu, Fei Huang, Haoran Wei, et al. Qwen2.5 technical report. *arXiv preprint arXiv:2412.15115*, 2024.

Shunyu Yao, Jeffrey Zhao, Dian Yu, Nan Du, Izhak Shafran, Karthik Narasimhan, and Yuan Cao. React: Synergizing reasoning and acting in language models. In *International Conference on Learning Representations (ICLR)*, 2023.

Shunyu Yao, Noah Shinn, Pedram Razavi, and Karthik Narasimhan. τ -bench: A benchmark for tool-agent-user interaction in real-world domains, 2024. URL <https://arxiv.org/abs/2406.12045>.

Weihao Zeng, Keqing He, Chuqiao Kuang, Xiaoguang Li, and Junxian He. Pushing test-time scaling limits of deep search with asymmetric verification. *arXiv preprint arXiv:2510.06135*, 2025.

Jiayi Zhang, Jinyu Xiang, Zhaoyang Yu, Fengwei Teng, Xiong-Hui Chen, Jiaqi Chen, Mingchen Zhuge, Xin Cheng, Sirui Hong, Jinlin Wang, Bingnan Zheng, Bang Liu, Yuyu Luo, and Chenglin Wu. AFlow: Automating agentic workflow generation. In *The Thirteenth International Conference on Learning Representations*, 2025. URL <https://openreview.net/forum?id=z5uVAKwmjf>.

Zhipu AI. Glm-4.5. <https://z.ai/blog/glm-4.5>, 2025.

Peilin Zhou, Bruce Leon, Xiang Ying, Can Zhang, Yifan Shao, Qichen Ye, Dading Chong, Zhiling Jin, Chenxuan Xie, Meng Cao, et al. Browsecamp-zh: Benchmarking web browsing ability of large language models in chinese. *arXiv preprint arXiv:2504.19314*, 2025a.

Yifei Zhou, Song Jiang, Yuandong Tian, Jason Weston, Sergey Levine, Sainbayar Sukhbaatar, and Xian Li. Sweet-rl: Training multi-turn llm agents on collaborative reasoning tasks. *arXiv preprint arXiv:2503.15478*, 2025b.