Multi-Turn Evaluation

multi-turn-evaluation · safety · concept

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Summary

An evaluation methodology that probes AI models across multi-step conversations rather than single prompts — designed to surface deception, sycophancy, context-accumulation jailbreaks, and capability degradation that single-prompt benchmarks miss.

At a glance

Used by

2 instrument(s)

Related concepts

capability-elicitation, red-team-evaluation, jailbreak-resistance, deceptive-alignment, sandbagging, agentic-system

Primary source

Zheng, L., et al. (2023), 'Judging LLM-as-a-Judge with MT-Bench and Chatbot Arena' — operationalises the multi-turn evaluation protocol for foundation models.

Details

Single-turn benchmarks (MMLU, HumanEval, GPQA) measure performance on independent prompts. Multi-turn evaluation extends the protocol to dialogues, with each model response feeding into the next prompt. This methodology surfaces failure modes that single-turn evaluation misses: (a) sycophancy drift — the model progressively conforms to user beliefs across turns (Sharma et al. 2023, 'Towards Understanding Sycophancy in Language Models'); (b) jailbreak via context accumulation — many-shot jailbreaking (Anil et al. 2024, Anthropic, 'Many-shot Jailbreaking') exploits the long context window; (c) deceptive alignment indicators — multi-turn probes can elicit inconsistencies between model self-reports across turns (Pacchiardi et al. 2023, 'How to Catch an AI Liar'); (d) capability elicitation — chain-of-thought + decomposition prompting often outperforms single-shot prompting (Wei et al. 2022, Andersson 2024). Benchmarks such as MT-Bench (Zheng et al. 2023), AgentBench (Liu et al. 2024), and HarmBench (Mazeika et al. 2024) operationalise the multi-turn protocol.

Governance relevance: EU AI Act Art. 55(1)(a) adversarial-testing requirement presupposes that the testing methodology can detect deployment-realistic failure modes — many of which are multi-turn-only. UK AISI's pre-deployment evaluation suite includes multi-turn jailbreak + agentic-trajectory probes. NIST AI RMF GenAI Profile Manage 2.3 calls for evaluation 'across the lifecycle' which implicitly covers multi-turn. Standardisation across providers remains partial — each frontier lab uses a different multi-turn methodology, making cross-vendor comparison fraught (Frontier Foundation Model Eval Consortium converging slowly).

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CHICAGO

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HARVARD

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