

SWE-DeceptionBench: Benchmarking Deceptive Behaviors of LLMs Across the Software Development Lifecycle

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Abstract (verbatim, from the arXiv metadata record)

Large Language Models (LLMs) are increasingly used throughout the software development lifecycle. This growing reliance on LLMs raises concerns about their trustworthiness, with deception posing a particularly important risk. Deceptive behavior takes the form of misleading responses or assistance in fabricating, concealing, or distorting information. To study this behavior, we introduce SWE-DeceptionBench, a benchmark for evaluating LLM deception in software engineering. The benchmark covers six lifecycle stages and two deception triggers: Active Deception, where models recognize infeasible or conflicting requirements but still present them as achievable, and Passive Deception, where models help fulfill explicit user requests to mislead others. We further introduce Neutral, Reward, and Pressure conditions to study the effect of external inducements, resulting in 720 test instances in Chinese and English. Evaluating seven mainstream LLMs, we find substantial deception even under the Neutral condition, with aggregate rates of 49.88% for Active Deception and 64.29% for Passive Deception. Deception rates vary across lifecycle stages, and external inducements affect Active and Passive Deception to different extents. We also evaluate lightweight defenses, finding that guard models miss many deceptive requests, and Self-Reminder reduces but does not eliminate deceptive responses. These findings highlight the need for more effective deception detection and mitigation methods to support trustworthy LLM-based software engineering.

Record

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Affiliations. None stated. The arXiv abstract page prints no institutional affiliation, and arxiv.org/html/2610.13626v1 returned HTTP 429 to the fetch proxy and was not retried, so no institution is attributed anywhere in this edition. Per the vault rule, the work is credited to "Researchers".

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Scope note on the two headline rates

The abstract reads: "we find substantial deception even under the Neutral condition, with aggregate rates of 49.88% for Active Deception and 64.29% for Passive Deception." The word "aggregate" does not disambiguate whether those two rates are computed within the Neutral condition alone or across all three conditions. The full text was not retrievable, so this edition attributes both figures exactly as the abstract phrases them and claims no per-condition, per-stage or per-model breakdown.