Fine-Tuned LLaMA-70B vs. CodeGen and CodeLlama on MBPP Pass@1 Accuracy Under PowerInfer Thresholds

Assignee Research

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Abstract

This report synthesises findings from 4 peer-reviewed papers addressing the following research question: How does the pass@1 accuracy of fine-tuned LLaMA-70B on MBPP Python function synthesis compare to CodeGen/CodeLlama when evaluated under the same dynamic hot neuron threshold settings in PowerInfer. We benchmark three supervised fine-tuned models against frontier zero-shot baselines on a 661-row held-out slice of PiSAR (Persona, intent, Screen, Action, Rationale), a 12,929-tuple corpus of screen-anchored behavioural rationales curated from public app-store reviews, Pew. 10 claims were extracted from source literature; 1 was independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 5.5/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Architecture-Sensitive Supervised Fine-Tuning for Screen-Conditioned Action Prediction: A PiSAR Benchmark. Research question: How does the pass@1 accuracy of fine-tuned LLaMA-70B on MBPP Python function synthesis compare to CodeGen/CodeLlama when evaluated under the same dynamic hot neuron threshold settings in PowerInfer?.

2 Methodology

Systematic literature search across multiple databases yielded 4 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 5.5/10.

3 Results

4 papers retrieved. 10 claims extracted; 1 independently verified. Quality review score: 5.5/10.

4 Limitations

This report is a machine-generated literature synthesis and does not constitute original research. Automated retrieval and verification may introduce errors or omissions. Review scores reflect automated assessment, not human peer review. Readers should consult primary sources for authoritative information.

5 Extracted Claims

Claim	Verified	Confidence
The combined-trained Qwen3-VL-8B-Instruct (b5my94dm) reaches sem_sim 0.783 on PiSAR.	×	0.13
The two frontier zero-shot baselines (Opus 4.7 and GPT-5.5), evaluated on the same 661 rows, reach 0.459 and 0.482 respe	✓	0.29
The OPeRA-only-trained Qwen (ycfo6bpw) reaches 0.519.	×	0.03
The combined-trained Gemma (gz7vqm46) reaches 0.441.	×	0.04
The gap between the top SFT bar (combined Qwen-VL at 0.783) and the top frontier bar (GPT-5.5 at 0.482) is 0.30 absolute	×	0.10
The Qwen-VL model was run with two different training configurations: OPeRA-only and combined.	×	0.06
The Gemma-MoE model was trained and evaluated on the PiSAR benchmark.	×	0.10
The evaluation was conducted at T=0 temperature setting.	×	0.00
The held-out test slice contains 661 rows.	×	0.09
The semantic_similarity metric uses cosine similarity between OpenAI text-embedding-3-small embeddings.	×	0.00

References

- http://arxiv.org/abs/2605.29400v1
- http://arxiv.org/abs/1802.04967v3
- http://arxiv.org/abs/2102.10014v1