

# OpenReviewer

A Specialized LLM for Generating Critical Scientific Paper Reviews

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## Summary

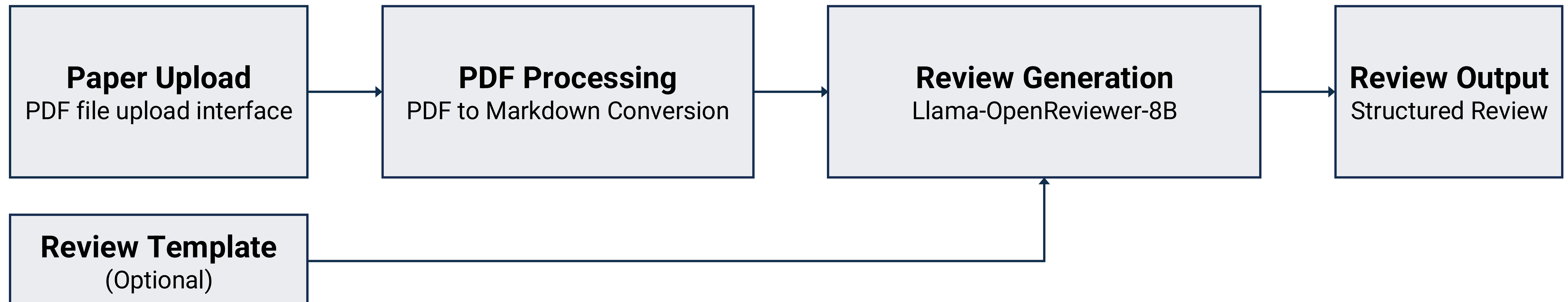
We present OpenReviewer, an open-source system that generates high-quality peer reviews for machine learning and AI papers. Powered by a specialized 8B LLM fine-tuned on 79,000 expert reviews from top conferences, it provides authors with constructive, realistic feedback that closely matches human reviewer assessments. Unlike general-purpose LLMs like GPT-4 and Claude-3.5, which tend toward overly positive evaluations, OpenReviewer delivers balanced, critical reviews to help researchers improve their work before submission.

## Motivation

- Assist authors in pre-submission phase
- Provide expert-like feedback early
- LLMs often lack domain-specific understanding and critical perspective
- Not replacing human peer reviews

## Training Data

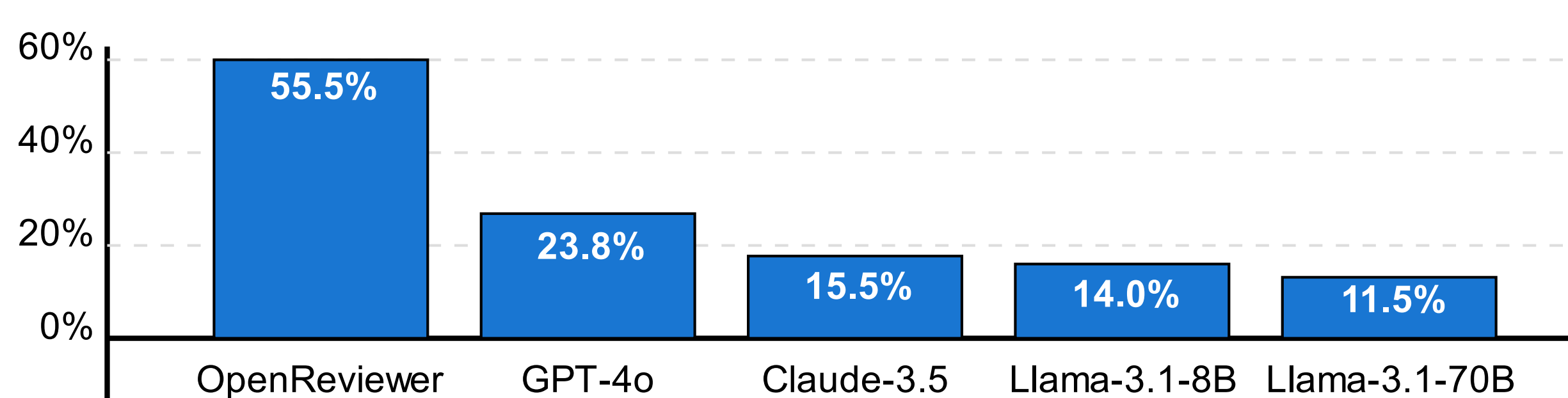
- 36,000 papers and 141,000 reviews
- Sourced from top ML conferences (ICLR, NeurIPS)
- PDF to markdown conversion including equations and tables using Marker
- 79,000 expert reviews after quality filtering



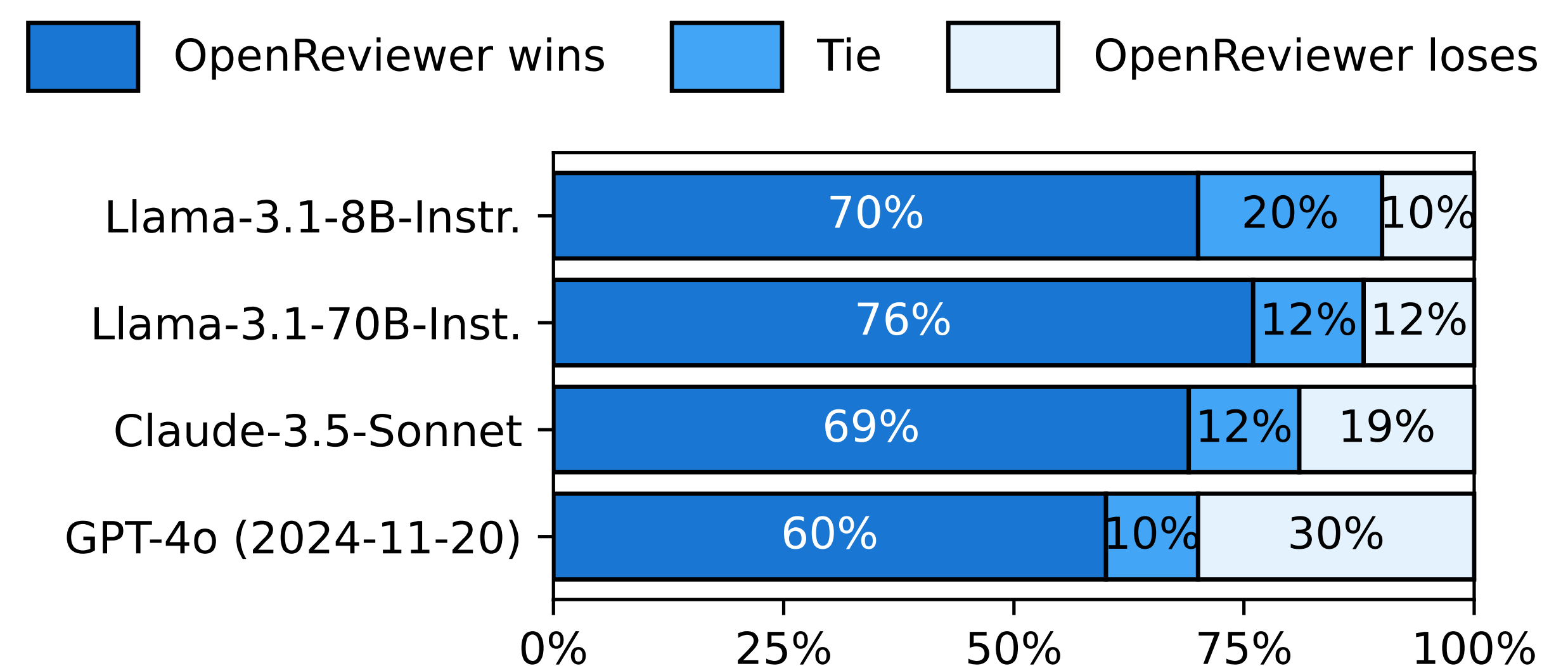
## Evaluation Results

### Matching Recommendations

How often model recommendations match at least one human reviewer



### Review Arena: Win Rates



Try the Demo: [huggingface.co/spaces/maxidl/openreviewer](https://huggingface.co/spaces/maxidl/openreviewer)

