EasyJudge: an Easy-to-use Tool for Comprehensive Response Evaluation of LLMs

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Abstract

Recently, there has been a growing trend of employing large language models (LLMs) to judge the quality of other LLMs. Many studies have adopted closed-source models, mainly using GPT-4 as the evaluator. However, due to the closed-source nature of the GPT-4 model, employing it as an evaluator has resulted in issues including transparency, controllability, and cost-effectiveness. Some researchers have turned to using fine-tuned open-source LLMs as evaluators. However, existing open-source evaluation LLMs generally lack a user-friendly visualization tool, and they have not been optimized for accelerated model inference, which causes inconvenience for researchers with limited resources and those working across different fields. This paper presents EasyJudge, a model developed to evaluate significant language model responses. It is lightweight, precise, efficient, and user-friendly, featuring an intuitive visualization interface for ease of deployment and use. EasyJudge uses detailed datasets and refined prompts for model optimization, achieving strong consistency with human and proprietary model evaluations. The model optimized with quantitative methods enables EasyJudge to run efficiently on consumergrade GPUs or even CPUs. We also provide detailed analysis and case studies to further reveal the potential of our method.¹

1 Introduction

The evaluation of response quality from large language models (LLMs) has been a central concern within the research community (Liang et al., 2022; Chang et al., 2024). As the instruction-following capabilities of LLMs continue to evolve, a more comprehensive and precise evaluation of their responses becomes particularly crucial (Qin et al., 2023). Traditional evaluation metrics such as

¹Code is open at https://github.com/4real3000/EasyJudge. Video demonstrations at https://youtu.be/3NcSWPf9rzM. BLEU (Papineni et al., 2002), ROUGE (Lin, 2004), BERTScore (Zhang et al., 2019), BARTScore (Yuan et al., 2021), and GPTScore (Fu et al., 2023) primarily offer shallow semantic analysis and assessment for basic natural language processing tasks. Due to their limited scope and poor interpretability, traditional metrics are ill-suited for the demands of LLMs, especially as tasks evolve to better align with human needs.

Some studies have proposed the concept of LLMas-a-Judge (Li et al., 2023b; Zheng et al., 2023), which leverages proprietary LLMs, particularly GPT-4 (Achiam et al., 2023), to evaluate the responses of other LLMs. By defining evaluation schemes within prompts, LLMs can utilize their instruction-following capabilities to provide reliable assessments, achieving high consistency with human evaluators. However, relying on external APIs for evaluation raises potential privacy concerns, and the lack of transparency in API models poses challenges to the reproducibility of the evaluations. Moreover, using APIs can result in significant cost overhead. For instance, evaluating four different LLM variants (ranging from 7B to 65B in size) across 1,000 evaluation instances using GPT-4 could exceed \$2,000. Such costs are often prohibitive for academic institutions or researchers operating under limited budgets (Kim et al., 2023).

A mainstream alternative approach is to train a evaluation model based on open-source LLMs. For example, PandaLM (Wang et al., 2023) and JudgeLM (Zhu et al., 2023) construct datasets from diverse instruction sets and annotations from GPTseries models, fine-tuning open-source models like LLaMA (Touvron et al., 2023) to serve as scalable evaluation models. Auto-J (Li et al., 2023a) and Prometheus (Kim et al., 2023) explore the refinement of model evaluation metrics, aiming to build fine-grained evaluation models.

However, current LLM-as-Judge research typically provides only a fine-tuned LLM, lacking an user-friendly visualization interface tailored for LLM evaluation. This poses challenges for users who seek a one-stop, simple, and efficient solution to evaluate responses generated by some models.

To advance the evaluation of LLMs in routine research, this study introduces an evaluation model and platform named EasyJudge, designed to function as an LLM-as-Judge system. EasyJudge employs two evaluation methodologies: POINTWISE (direct scoring) and PAIRWISE (pairwise comparison). The model is fine-tuned on a rigorously curated dataset comprising real-world LLM instruction responses, systematically classified into 50 distinct scenario categories. This dataset incorporates response data from over ten open-source LLMs, ensuring diverse and representative training data for reliable evaluation model training.

Additionally, we defined 8-10 specific evaluation criteria for each of the 50 scenario categories, resulting in 139 evaluation criteria related to LLM responses. In this work, these multi-scenario, multicriteria instruction datasets were used to fine-tune the LLaMA-3-8b model. The fine-tuned model can provide precise and multidimensional evaluations of LLMs' rather than generalized assessments. Additionally, this work employs techniques such as quantization and mixed precision to reduce memory usage and resource overhead during runtime, thereby achieving faster inference speeds. Finally, the model has been encapsulated to provide users with a simplified, user-friendly interface that is clear and intuitive to operate.

The specific features of EasyJudge are as follows:

- Lightweight usage model. EasyJudge is built to minimize dependency requirements, offering a simple installation process and precise documentation. Users can initiate the evaluation interface with only a few basic commands.
- (2) Comprehensive evaluation tool. EasyJudge offers a highly customizable interface, allowing users to select evaluation scenarios and flexibly combine evaluation criteria based on their needs. The visualization interface has been carefully designed to present users with an intuitive perspective on various evaluation results.
- (3) Efficient inference engine. EasyJudge employs model quantization, memory manage-

ment optimization, and hardware acceleration support to enable efficient inference. As a result, EasyJudge can run seamlessly on consumer-grade GPUs and even CPUs.

2 Related Work

2.1 Evaluation Based on Reference Texts

Traditional model-free scoring methods like BLEU (Papineni et al., 2002) and ROUGE (Lin, 2004) were widely used but have limitations in evaluation reliability. Recent model-based methods, such as BERTScore (Zhang et al., 2019), BLEURT (Sellam et al., 2020), and BARTScore (Yuan et al., 2021), improve evaluation by capturing semantic-level information. EasyJudge visually compares responses using metrics like ROUGE, BLEU, and BERTScore, offering users a more comprehensive and intuitive evaluation of models.

2.2 LLM-Based Text Evaluation

Recent research has shifted towards using LLMs as evaluators, employing GPT-4 or fine-tuned Judge LLMs to assess the text quality generated by other models. Recent studies have shown that ChatGPT can outperform crowdsourced workers in text annotation tasks (Gilardi et al., 2023; Chiang and Lee, 2023). Using closed-source models like GPT-4 for evaluation poses challenges, including high costs, privacy risks, and limited control. Fine-tuned opensource Judge LLMs, such as PandaLM (Wang et al., 2023), AUTO-J (Li et al., 2023a), PROMETHEUS (Kim et al., 2023), JudgeLM (Zhu et al., 2023), and Eval-Instruct (Wu et al., 2024), have been developed to overcome this. These models offer costeffective, reliable evaluation solutions, addressing issues like data leakage, evaluation bias and adapting to diverse tasks. They collectively advance LLM evaluation by integrating subjective criteria, enhancing multimodal and dialogue tasks, and providing alternatives to closed-source models.

However, current LLM-as-Judge research typically only provides fine-tuned LLMs, lacking an intuitive and user-friendly visualization interface specifically optimized for LLM evaluation. This presents challenges for users who seek a simple and efficient one-stop solution for evaluating individual responses or entire texts. Additionally, users are unable to intuitively access evaluation results from these models. A comparison between EasyJudge and these evaluation models is provided in Table 1.



Figure 1: Overview of the EasyJudge method.

3 System Overview

This section provides a detailed overview of the EasyJudge system. As shown in Figure 1, Easy-Judge consists of three key components:

3.1 Data Processing Module

We collect real-world interaction data between humans and LLMs to create the initial Instruction Dataset. A classifier is then trained to categorize this instruction data. Additionally, GPT-4 is employed to expand the instructions through prompts. Multiple open-source large models are then used to generate responses to the instruction data. Finally, GPT-4 is invoked with carefully designed prompts that include detailed evaluation criteria to produce evaluation results. The data is then integrated for use in the subsequent model fine-tuning.

3.2 Evaluation Model Training

This is the core of EasyJudge, where the LLaMA-3-8b base model is fine-tuned using the multiscenario, multi-criteria instruction data obtained from the data processing phase. The result is the POINTWISE model for direct evaluation and the PAIRWISE model for pairwise comparison evaluation. Next, model merging techniques are applied to integrate the performance of both models. Finally, model quantization techniques are used to optimize the model.

3.3 User-Friendly Interface

The evaluation process of model responses is designed to be transparent, offering users an intuitive interface with several key features. These include selecting models, adjusting model parameters, configuring evaluation scenarios, and customizing evaluation criteria. Additionally, the interface provides a clear visualization of the evaluation results. For example, it displays the outcomes of pairwise comparisons and direct scoring in a straightforward manner, offers detailed feedback, and presents multi-dimensional score references to help users better understand the evaluation process.

4 Implementation Details

To better understand the evaluation process within EasyJudge, this section will explain the implementation of three key issues.

4.1 Data Processing

4.1.1 Definition of Evaluation Scenarios and Criteria

To ensure a more accurate and context-relevant evaluation of LLM responses, EasyJudge, based on prior research (Kim et al., 2023; Zhu et al., 2023; Li et al., 2023a), categorizes evaluation scenarios into 50 distinct types, which are further summarized into nine broader categories: text generation and writing, information extraction and analysis, mathematics and logical reasoning, code tasks, QA,

| Name | Foundation | Evaluation scheme | Web GUI | Result visualization | Inference acceleration |
|------------------------------|-----------------|--------------------|---------|----------------------|------------------------|
| PandaLM(Wang et al., 2023) | LLaMA | Pairwise | Yes | No | No |
| JudgeLM(Zhu et al., 2023) | Vicuna | Pairwise | Yes | No | No |
| Auto-J(Li et al., 2023a) | LLaMA2-chat | Pairwise/Pointwise | No | No | No |
| Prometheus(Kim et al., 2023) | LLaMA2-chat | Pointwise | No | No | No |
| EasyJudge(ours) | LLaMA3-instruct | Pairwise/Pointwise | Yes | Yes | Yes |

Table 1: Comparison of response evaluation methods based on LLMs.

reasoning and judgment, role-playing and conversation, basic NLP tasks, and a default type. It is intuitive to understand that the evaluation criteria for responses in different scenarios, such as code generation and writing a project proposal, should vary significantly. Therefore, EasyJudge customizes evaluation criteria for each of the 50 distinct scenarios. Each category includes 8-10 evaluation criteria, totalling 134 unique criteria divided into four main categories: Basic, Style, Content, and Format.

4.1.2 Dataset Construction

High-quality datasets are crucial for effectively fine-tuning LLMs to serve as evaluation judges. However, existing datasets and prior research often lack sufficient diversity and detailed evaluation criteria. To address these issues, EasyJudge introduces a new dataset that includes various seed tasks across different evaluation scenarios, comprehensive answers from multiple open-source LLMs, scoring results from a teacher LLM across various criteria dimensions, and detailed reasoning behind each evaluation.

EasyJudge extracts 15k seed tasks from a large-_qa, flan, truthful_qa, and ultrachat. A classification model is then used to categorize the instructions based on the scenario definitions described in section 4.1.1. For scenarios with limited instructions, GPT-4 is employed to supplement them using the self-instruct method. The prompt template used for this process is provided in Figure 3. To enhance the diversity of the dataset, we aggregate responses from multiple open-source LLMs, including but not limited to LLaMA, Alpaca, and Vicuna. Next, we combine the LLM-generated responses with reference answers to create an answer set. For PAIRWISE tasks, two responses from different open-source models are randomly selected from the answer set for the same instruction. An advanced teacher model, GPT-4, is then used to assign detailed scores and provide thorough reasoning for the comparison. For POINTWISE tasks, a response from an open-source model is randomly

selected from the answer set for a given instruction. The advanced teacher model, GPT-4, then assigns detailed scores and provides comprehensive reasoning for the evaluation. To ensure robust and comprehensive judgments, we utilized detailed prompt templates, the specifics of which are provided in Figure 4 and Figure 5. The prompt contains critical inputs such as the scenario, evaluation criteria, instruction, and response to be evaluated, along with the evaluation requirements and output format. Including these details ensures the model produces clear, comprehensive, and accurate evaluation results.

4.2 Evaluation Model Fine-Tuning

The data required to train the EasyJudge model is constructed by integrating the datasets mentioned in section 4.1.2. The training data follows the Alpaca fine-tuning format, which consists of four components: instruction, input, output, and system. The instruction includes the task to be evaluated and its corresponding response, evaluation requirements and the output format; the input is left empty by default, the output contains the scores and reasoning provided by the teacher model GPT-4, and the system includes the scenario and evaluation criteria. The data templates are in Figure 6.

To reduce positional bias in PAIRWISE comparisons, EasyJudge applies a simple data augmentation technique. According to the judgelm, For each pairwise training sample, the order of the two responses in the input is randomly swapped. Additionally, to enhance the model's ability to handle unknown responses, EasyJudge randomly drops the reference for each data point (Zhu et al., 2023).

EasyJudge adopts the LLaMA-3-8b model as its base LLM and utilizes the LLaMA-Factory framework for model fine-tuning. Training parameter details can be found in Table 3. The PAIRWISE evaluation model is fine-tuned using 5k data points, while the POINTWISE evaluation model uses 10k data points.

Moreover, EasyJudge employs the DARE weight

merging strategy to integrate models trained under different evaluation modes while applying INT8 quantization to significantly reduce model size and inference time, enhancing deployment efficiency and applicability without compromising evaluation performance.

To demonstrate the superior performance of the EasyJudge model in evaluation tasks, this paper presents the model's test results on the PandaLMtest and Prometheus-test-ood datasets. The results are shown in Table 2. We show that GPT-4, a closed-source model, achieves the highest performance on pairwise selection and pointwise grading tasks across both datasets. However, our proposed open-source model, EasyJudge-8B, outperforms other open-source models for evaluating LLM-generated responses, producing results that are comparable to those of GPT-4. EasyJudge-8B not only delivers competitive performance but also offers significant advantages in cost-effectiveness by avoiding expensive API calls and mitigating data leakage risks associated with closed-source models. Therefore, EasyJudge-8B provides a competitive, secure, and cost-efficient alternative to closed-source evaluators like GPT-4 for NLP tasks.

| Model | PandaLM-test | | Prometheus-test-ood | |
|---------------------|--------------|-------|---------------------|----------|
| Model | Accuracy | F1 | Pearson | Spearman |
| GPT-3.5 | 71.30 | 69.52 | 0.563 | 0.521 |
| GPT-4 | 78.52 | 73.76 | 0.743 | 0.747 |
| LLaMA-3-8B-Instruct | 70.75 | 64.29 | 0.591 | 0.641 |
| JudgeLM-7B | 70.97 | 67.59 | 0.610 | 0.690 |
| PandLM-7B | 67.57 | 57.49 | 0.386 | 0.383 |
| Auto-J-13B | 71.47 | 61.01 | 0.591 | 0.580 |
| EasyJudge-8B | 71.83 | 68.36 | 0.679 | 0.701 |

Table 2: Results of evaluators on PAIRWISE and POINTWISE.

4.3 User-Friendly Interface Development

To make the evaluation process of LLMs more intuitive and user-friendly, we developed a Streamlitbased interface. Using the Streamlit framework, we created a transparent and responsive interface. This interface not only supports data upload and parameter adjustments but also allows users to select evaluation scenarios dynamically through radio buttons. The evaluation results are presented in a rich format, including text and graphical representations, ensuring that users can easily interpret the meaning of the model's output. This design significantly reduces the operational complexity of Easy-Judge and enhances user experience, enabling even non-expert users to perform advanced model evaluations efficiently. This intuitive interface and the model's efficient computation capabilities can meet diverse evaluation needs, particularly in resourceconstrained environments.

5 Demonstration Scenarios

5.1 Diversity Classification

Figure 2 provides a screenshot of the EasyJudge user interface, through which users can perform large model response evaluations by following these steps:

Step 1 (Task Configuration): As shown in Figure 2-1, the configuration interface guides users through the initial setup. Users begin by selecting the evaluation task type, which includes single response direct scoring (POINTWISE) and pairwise comparison (PAIRWISE). The system automatically selects the appropriate prompt template based on the chosen scoring strategy. After selecting the task, another essential configuration allows users to adjust the EasyJudge model parameters, such as temperature, Top-p, and max_length, according to their specific needs to achieve optimal evaluation results.

Step 2 (Scenario and Criteria Configuration): Next, users can select specific task scenarios and criteria tailored to their evaluation data, a crucial advantage of EasyJudge's highly customizable system. The evaluation criteria configuration is shown in Figure 2-2 (scenario configuration can be found in Figure 7). Once users select a task scenario, EasyJudge conducts a multi-dimensional evaluation based on the specific criteria. Alternatively, users can opt not to select a scenario where Easy-Judge will evaluate the model response using the default scenario. The default scenario encompasses ten standard evaluation criteria suitable for most task evaluations. For more customized evaluation results, users can manually select the criteria. Easy-Judge currently offers 40 evaluation criteria across four main categories for tailored evaluation. If custom criteria are selected, the system will automatically bypass scenario selection.

Step 3 (Data Upload): As shown in Figure 2-3, EasyJudge provides two methods for data upload. Suppose a user is evaluating a single data instance. In that case, they can sequentially copy the instruction, Model 1's response, Model 2's response, and the reference answer into the corresponding input fields, then click the submit button to initiate the



Figure 2: A screenshot of EasyJudge with an example evaluation task of PAIRWISE.

evaluation. To evaluate multiple data instances, users must upload a JSON/JSONL file containing the evaluation data in Alpaca format. After uploading the file, users can click the submit button to start the evaluation process. The interface for single data evaluation in the POINTWISE mode is shown in Figure 8.

Step 4 (Results Display): In this step, Easy-Judge presents the final evaluation results, providing users with clear evaluation information that helps them intuitively understand the quality of the responses. Taking PAIRWISE evaluation as an example (Details on POINTWISE evaluation can be found in Appendix C.), as shown in Figure 2-4, the top of the page displays the final evaluation results. At the same time, the middle section presents the Detailed Evaluation Feedback from the EasyJudge model. At the bottom, three charts (labeled as Figures A, b, and c) are provided: Figure A shows the scores of Response A and Response B across different evaluation criteria dimensions and compares the two responses in each dimension. Figure b compares Response A with the reference text, displaying evaluation results based on traditional metrics, including ROUGE, BLEU, BERTScore, BLEURT, and BARTScore. Figure c compares Response B with the reference answer evaluated

using traditional metrics. Finally, if users choose to upload a JSON/JSONL file, then they can finally download a JSON file containing the evaluation result data by clicking the "Download" button.

6 Conclusion

This paper introduces EasyJudge, an innovative tool for evaluating LLMs with advanced models, offering a customizable interface and precise, multi-dimensional assessments. It enhances efficiency through model quantization, enabling use on consumer-grade GPUs and CPUs. Future research plans include integrating new technologies to extend EasyJudge's capabilities to evaluate multimodal models, Retrieval-Augmented Generation (RAG), and intelligent agents, contributing to advancing Artificial General Intelligence (AGI) while improving evaluation accuracy and practicality across diverse scenarios.

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References

- Josh Achiam, Steven Adler, Sandhini Agarwal, Lama Ahmad, Ilge Akkaya, Florencia Leoni Aleman, Diogo Almeida, Janko Altenschmidt, Sam Altman, Shyamal Anadkat, et al. 2023. Gpt-4 technical report. *arXiv preprint arXiv:2303.08774*.
- Yupeng Chang, Xu Wang, Jindong Wang, Yuan Wu, Linyi Yang, Kaijie Zhu, Hao Chen, Xiaoyuan Yi, Cunxiang Wang, Yidong Wang, et al. 2024. A survey on evaluation of large language models. ACM Transactions on Intelligent Systems and Technology, 15(3):1–45.
- Cheng-Han Chiang and Hung-yi Lee. 2023. Can large language models be an alternative to human evaluations? *arXiv preprint arXiv:2305.01937*.
- Jinlan Fu, See-Kiong Ng, Zhengbao Jiang, and Pengfei Liu. 2023. Gptscore: Evaluate as you desire. *arXiv preprint arXiv:2302.04166*.
- Fabrizio Gilardi, Meysam Alizadeh, and Maël Kubli. 2023. Chatgpt outperforms crowd workers for text-annotation tasks. *Proceedings of the National Academy of Sciences*, 120(30):e2305016120.
- Seungone Kim, Jamin Shin, Yejin Cho, Joel Jang, Shayne Longpre, Hwaran Lee, Sangdoo Yun, Seongjin Shin, Sungdong Kim, James Thorne, et al. 2023. Prometheus: Inducing fine-grained evaluation capability in language models. In *The Twelfth International Conference on Learning Representations*.
- Junlong Li, Shichao Sun, Weizhe Yuan, Run-Ze Fan, Hai Zhao, and Pengfei Liu. 2023a. Generative judge for evaluating alignment. *arXiv preprint arXiv:2310.05470*.
- Xuechen Li, Tianyi Zhang, Yann Dubois, Rohan Taori, Ishaan Gulrajani, Carlos Guestrin, Percy Liang, and Tatsunori B Hashimoto. 2023b. Alpacaeval: An automatic evaluator of instruction-following models.
- Percy Liang, Rishi Bommasani, Tony Lee, Dimitris Tsipras, Dilara Soylu, Michihiro Yasunaga, Yian Zhang, Deepak Narayanan, Yuhuai Wu, Ananya Kumar, et al. 2022. Holistic evaluation of language models. *arXiv preprint arXiv:2211.09110*.
- Chin-Yew Lin. 2004. Rouge: A package for automatic evaluation of summaries. In *Text summarization branches out*, pages 74–81.
- Kishore Papineni, Salim Roukos, Todd Ward, and Wei-Jing Zhu. 2002. Bleu: a method for automatic evaluation of machine translation. In *Proceedings of the* 40th annual meeting of the Association for Computational Linguistics, pages 311–318.
- Chengwei Qin, Aston Zhang, Zhuosheng Zhang, Jiaao Chen, Michihiro Yasunaga, and Diyi Yang. 2023. Is chatgpt a general-purpose natural language processing task solver? *arXiv preprint arXiv:2302.06476*.

- Thibault Sellam, Dipanjan Das, and Ankur P Parikh. 2020. Bleurt: Learning robust metrics for text generation. *arXiv preprint arXiv:2004.04696*.
- Hugo Touvron, Thibaut Lavril, Gautier Izacard, Xavier Martinet, Marie-Anne Lachaux, Timothée Lacroix, Baptiste Rozière, Naman Goyal, Eric Hambro, Faisal Azhar, et al. 2023. Llama: Open and efficient foundation language models. *arXiv preprint arXiv:2302.13971*.
- Yidong Wang, Zhuohao Yu, Zhengran Zeng, Linyi Yang, Cunxiang Wang, Hao Chen, Chaoya Jiang, Rui Xie, Jindong Wang, Xing Xie, et al. 2023. Pandalm: An automatic evaluation benchmark for llm instruction tuning optimization. *arXiv preprint arXiv:2306.05087*.
- Wenhao Wu, Wei Li, Xinyan Xiao, Jiachen Liu, and Sujian Li. 2024. Instructeval: Instruction-tuned text evaluator from human preference. In *Findings of the Association for Computational Linguistics ACL 2024*, pages 13462–13474.
- Weizhe Yuan, Graham Neubig, and Pengfei Liu. 2021. Bartscore: Evaluating generated text as text generation. *Advances in Neural Information Processing Systems*, 34:27263–27277.
- Tianyi Zhang, Varsha Kishore, Felix Wu, Kilian Q Weinberger, and Yoav Artzi. 2019. Bertscore: Evaluating text generation with bert. *arXiv preprint arXiv:1904.09675*.
- Lianmin Zheng, Wei-Lin Chiang, Ying Sheng, Siyuan Zhuang, Zhanghao Wu, Yonghao Zhuang, Zi Lin, Zhuohan Li, Dacheng Li, Eric Xing, et al. 2023. Judging llm-as-a-judge with mt-bench and chatbot arena. *Advances in Neural Information Processing Systems*, 36:46595–46623.
- Lianghui Zhu, Xinggang Wang, and Xinlong Wang. 2023. Judgelm: Fine-tuned large language models are scalable judges. *arXiv preprint arXiv:2310.17631*.

A Prompt Templates

This section lists all the prompt templates that Easy-Judge used. Figure 3 shows the prompt for invoking GPT-4 extended instructions. Figure 4 shows the prompt used for PAIRWISE instruction evaluation. Figure 5 details the prompt for POINTWISE instruction evaluation. Figure 6 displays the AL-PACA fine-tuning data template.

B User Interface Display

This section shows more user interface. Figure 7 displays all the available scenarios for users, Figure 8 shows one input method for POINTWISE evaluation, Figure 9 presents an example of detailed

Invoke GPT-4 extended instructions

You are asked to provide 10 diverse prompts. These task prompts will be provided to a GPT model and we will evaluate the ability of the GPT model to reply to these prompts. The type of the generated prompt needs to be {category_name}. Do not generate other types of prompts. The following are some examples: {examples} Here are the requirements you need to follow to provide prompts: 1. The prompts need to be complete sentences, not phrases or fragments. 2. The prompts need to be varied, do not use similar prompts. 3.the prompts need to be meaningful, do not use meaningless prompts. 4. The prompts need to have a variety of tones, e.g., combining interrogative and imperative sentences. 5. The prompts need to be challenging, do not use simple directions. 6. The prompts need to be something that the Large Language Model can accomplish. For example, don't ask the assistant to create any visual or audio output. For example, don't ask the assistant to wake you up at 5pm or set a reminder because it can't perform any action. For example, prompts should not be related to audio, video, images, hyperlinks. 7. The prompts are in English, except for translation-related questions. 8.Some prompts can provide contextual information, should involve realistic data, and should not contain simple placeholders. Not all prompts require input. For example, when an prompts asks for general knowledge information, such as "What is the tallest mountain in the world?", it does not need to provide specific context. After you have provided the prompts, please add the category of the prompts in a pair of && sign after the prompt and surround the prompt with in a pair of @@ sign. For example, if the prompt is "@@Explain what `COUNT(Time[@[Start]:[Finish]])=4` does in Excel. @@&& {category name} &&", then the category is {category name}. Note that the category of prompt you provide must be {category_name}. Here are some examples of prompts you provide: @@example prompt1@@ &&category&& @@example prompt2@@ &&category&& . . . @@example prompt9@@ &&category&& @@example prompt10@@ &&category&& The following is a list of 10 good task prompts with serial numbers and category

Figure 3: The prompt for invoking GPT-4 extended instructions.

feedback for a POINTWISE evaluation, and Figure 10 shows a detailed scoring breakdown for a POINTWISE evaluation.

C Training Details

This section shows the parameter settings for training EasyJudge, as shown in Table 3.

PAIRWISE instruction evaluation prompt

You are given the criteria to craft good responses for this type of query from users: {scenario} The criteria are as follows: [Criteria start] {criteria}

[Criteria end]

You are assessing two submitted responses on a given user's query and judging which response is better or they are tied. Here is the data:

[BEGIN DATA]

[Query]: {question_body} ***

[Response 1]: {answer1_body} ***

[Response 2]: {answer2_body} ***

[Reference]: {reference}

[END DATA] Please follow the evaluation process outlined below:

1. First, using the given scoring criteria and reference answer, evaluate responses A and B from various dimensions, scoring each dimension from 1 to 10. In the answer section, return all your scoring results in the following dictionary format (including brackets), and ensure your scores are integers: {{Dimension One': Score, 'Dimension Two': Score, ..., 'Overall Score': Score}}, e.g., {{Factual Accuracy': 9, 'User Need Fulfillment': 6, ..., 'Overall Score': 7}}.

2. Calculate the final score for responses A and B separately. The final score is the average of the scores for each dimension. Specifically, add the scores of all dimensions and divide by the total number of dimensions, where Dimensions 1 and 2 have a weight of 2, and the rest have a weight of 1. Round the result to the nearest integer.

3. Compare the final scores of response A and response B, and conclude which is better, or if they are equally good.

4. Write detailed feedback explaining why A or B is better, focusing on aspects emphasized in the evaluation criteria. Additionally, brainstorm and provide a more detailed comparative feedback result. When writing feedback, compare responses A and B directly, mentioning their similarities and differences. Try to articulate a reasoning process that explores the commonalities and differences between the two responses, mentioning these reasons at the end.

5. In the detailed feedback, do not explicitly mention the reference answer. For example, avoid phrases like "compared to the reference answer." Assume you inherently know the reference answer, which can be used to identify details missing in the two evaluated responses. Also, do not explicitly mention the scoring results in the detailed feedback as these have already been provided.

6. Do not generate any additional introductions, conclusions, or explanations.

The output format should be as follows: "@@@{{response A: Scores per dimension: ['Dimension One': Score, 'Dimension Two': Score, ..., 'Overall Score': Score]}}@@@{{response B: Scores per dimension: ['Dimension One': Score, 'Dimension Two': Score, ..., 'Overall Score': Score]}}###Final Result: {{A or B or Tie}}&&&Detailed Evaluation Feedback: {{Evaluation Content}}***"

Figure 4: The prompt used for PAIRWISE instruction evaluation.

POINTWISE instruction evaluation prompt

You are assessing submitted response on a given user's query based on the criteria you have known and evaluating the quality of a response. Here is the data:

[BEGIN DATA]

[Query]: {question_body}

[Response]: {answer_body}

*** ***

[Reference]: {reference}

[END DATA]

Please follow the evaluation process below:

1.Review the response and the given criteria. Using the reference answer as a guide, evaluate the AI assistant's response from different dimensions, assigning a score of 1 to 10 for each dimension. For the scoring, return all your results in the following dictionary format (including the brackets), and ensure that your scores are integers: {{'Dimension 1': score, 'Dimension 2': score, ..., 'Overall Score': score}}, for example: {{'Factual Accuracy': 9, 'Meeting User Needs': 6, ..., 'Overall Score': 7}}.

2.Calculate the final score for responses A and B separately. The final score is the average of the scores for each dimension. Specifically, add the scores of all dimensions and divide by the total number of dimensions, where Dimensions 1 and 2 have a weight of 2, and the rest have a weight of 1. Round the result to the nearest integer.

3.Please Write detailed feedback. Based on the provided scoring criteria and reference answer, write detailed evaluation feedback that strictly assesses the response quality rather than offering a general assessment. Ensure a comprehensive evaluation in line with the scoring criteria without breaking them down into points or making repetitive statements. Additionally, brainstorm to deliver thorough feedback that demonstrates the assessment thought process.

4.In the detailed feedback, do not explicitly mention the reference answer. For example, avoid phrases like "compared to the reference answer." Assume you inherently know the reference answer, which can be used to identify details missing in the two evaluated responses. Also, do not explicitly mention the scoring results in the detailed feedback as these have already been provided.

5. Please do not generate any additional openings, conclusions, or explanations.

The output format should be as follows:

@@@Dimension Scores: {{'Dimension 1': score, 'Dimension 2': score, ..., 'Overall Score': score}}###Overall Score: {{score}}&&&Detailed Evaluation Feedback: {{evaluation content}}***

Figure 5: The prompt used for POINTWISE instruction evaluation.

```
ALPACA fine-tuning data template
Training PAIRWISE Models:
"PAIRWISE": {
    "file_name": "your file path",
    "columns": {
         "prompt": "instruction",
         "query": "input",
         "response": "output",
         "system": "system"
    }
}
Training POINTWISE Models:
"POINTWISE": {
    "file_name": "your file path",
    "columns": {
         "prompt": "instruction",
         "query": "input",
         "response": "output",
         "system": "system"
    }
}
```





Figure 7: This interface displays all the available scenario for users.

| | Deploy |
|---|--|
| EasyJudge EasyJudge is an innovative tool that uses large language models to precisely assess other models' responses across multiple | |
| dimensions and various scenarios. | Drag and drop file here Limit 200MB per file - JSON, JSONL Browse files |
| Select a model | Choose an scenario 🗸 |
| POINTWISE | You selected: code_generation |
| You selected: POINTWISE | Select evaluation criteria * |
| temperature | You selected: No criteria selected. |
| 0.10 | Question: |
| 0.01 1. | 09 Python function to change input to upper case. |
| top_p 0.90 | Anner |
| 8.01 1. | You can use the following code to change the input to uppercase. (n/ndef main():) # define a list to store the data \n data = [1, 2, 3, 4, 5]/n/n # convert the item to an int and add it to the list() # it will be stored on the |
| max_length | Reference: |
| 1024 | The Python function to change input to upper case is 'upper()'. You can call this function on a string in Python and it will return the string in upper case. For example, if you have a string 'my_string = 'hello world' |
| 1024 81 Clear Chat History | Submit |
| | |
| | |

Figure 8: This interface displays one input method for POINTWISE evaluation.

| Final Score: 2/10 | Detailed Evaluation Feedback |
|-------------------|--|
| | The response provided does not meet the user's query requirements. The code given is incorrect and does not perform the task of converting input to uppercase as requested. Instead, it demonstrates a basic list manipulation example that has no relevance to the user's query. |
| | The code correctness is severely lacking since the function does not achieve the intended purpose. It fails to address the requirement of changing input to uppercase. |
| | In terms of completeness and functionality, the response falls short because it does not include any relevant components or functionality related to converting text to uppercase. The provided example is unrelated to the user's request. |
| | The code readability is slightly better but still subpar. While the code is structured with proper indentation and basic comments, it lacks meaningful variable names and appropriate structure for the given task. |
| | For input/output requirements, the response does not adhere to the expected behavior of converting text to uppercase. The provided example focuses on list manipulation instead. |
| | Documentation is minimal and does not explain how to use or extend the code for the intended purpose. There are no comments explaining the conversion process. |
| | Modularity is weak as the code does not demonstrate a clear separation of concerns related to the user's query. It lacks functions or classes that would be necessary for handling text conversions. |
| | Running efficiency is not applicable here since the provided code does not perform the required task, making it irrelevant in this context. |
| | Harmlessness is relatively better; there are no apparent security risks or malicious behavior in the code. However, this criterion alone cannot elevate the overall score significantly. |
| | Error handling is almost non-existent. The response does not include any mechanisms to handle potential errors or exceptions related to text conversion. |
| | Testing is completely absent. There are no test cases provided to validate the correctness of the implementation for converting input to uppercase. |
| | Overall, the response fails to meet most of the criteria and does not address the user's query effectively. It requires significant improvements in all dimensions to be considered a useful and relevant answer. |
| | |

Figure 9: This interface shows an example of detailed feedback for a POINTWISE evaluation.

Score Comparison Breakdown 📊



Figure 10: This interface displays a detailed scoring breakdown for a POINTWISE evaluation.

| Parameters | Value | | |
|-----------------------------|-----------------------------|--|--|
| cutoff_len | 2048 | | |
| finetuning_type | lora | | |
| per_device_train_batch_size | 4 | | |
| lr_scheduler_type | cosine | | |
| lora_rank | 8 | | |
| lora_target | q_proj, v_proj | | |
| additional_target | embed_tokens, lm_head, norm | | |
| learning_rate | $2 	imes 10^{-4}$ | | |
| num train epochs | 1 | | |
| gradient accumulation steps | 2 | | |
| max grad norm | 1 | | |
| lora dropout | 0.05 | | |
| warmup steps | 0 | | |
| fp16 | TRUE | | |

Table 3: The training parameters of the EasyJudge.