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Appendix

Appendix A includes the following supplementary material about our experiment details.

- [A.1: Taxonomy Crosswalks](#)
 - Table 3: Crosswalk of Our Taxonomy and Previous Output Homogenization Studies
 - Table 4: Crosswalk of Task Categories for ChatGPT Usage with Our Taxonomy
 - Table 5: Crosswalk of Task Categories for Claude Usage with Our Taxonomy
- [A.2: Evaluation Datasets](#)
- [A.3: Task Classification Into Our Taxonomy](#)
 - Table 6: Number of Prompts per Dataset and Taxonomy Category
 - Figure 4: Recall for Models' Task Classification with Human Annotation
- [A.4: Prompts for Task-Anchored Sampling Strategies \(Table 7\)](#)
- [A.5: Measuring Functional Diversity](#)
 - Table 8: Agreement Between Human Annotation and LLM-Judges
 - Table 9: Prompts for Functional Diversity LLM-Judges
 - Table 10: Examples of Functionally Diverse Responses by Category
 - Table 11: Examples of Homogeneous Responses by Category
- [A.6: Measuring Quality Using LLM-Judges With Task Grading Checklists](#)
 - Table 12: Examples of Task-Specific Grading Checklists
 - Table 13: Example Responses Comparing Checklist-Based Grading & Athene Reward
- [A.7: Alignment Experiments](#)

Appendix B includes the following supplementary tables and figures about our experiment results.

- Figure 5, 6, 7, 8: Functional Diversity for Claude-4-Sonnet, Gemini-2.5-Flash, Llama-3.1-8B-Instruct, and Mistral-7B-Instruct-v0.3 (c.f. Figure 2 for GPT-4o)
- Figure 9, 10, 11, 12: Claude-4-Sonnet, Gemini-2.5-Flash, Llama-3.1-8B-Instruct, and Mistral-7B-Instruct-v0.3 (c.f. Figure 3 for GPT-4o)
- Figure 13: Diversity-Quality Tradeoff Using Embeddings
- Figure 14: Diversity-Quality Tradeoff for Varying Number of Generated Responses (5-10)
- Figures 15-16: Functional Diversity for Llama-3.1-8B-Instruct with DPO and GRPO
- Figure 17: Diversity-Quality Tradeoff for Llama-3.1-8B-Instruct with DPO and GRPO
- Figures 18-19: Functional Diversity for Llama-3.1-8B-Instruct with DARLING alignment
- Figure 20: Diversity-Quality Tradeoff for Llama-3.1-8B-Instruct w/DARLING alignment
- Table 14-15: Functional Diversity by Model, Sampling Strategy & Task Category
- Table 16-17: Vocabulary Diversity by Model, Sampling Strategy & Task Category
- Table 18-19: Embedding Diversity by Model, Sampling Strategy & Task Category
- Table 22-23: Checklist-Based Quality by Model, Sampling Strategy & Task Category
- Table 24-25: Athene-RM-8B Reward by Model, Sampling Strategy & Task Category
- Table 26-27: Accuracy by Model, Sampling Strategy & Task Category (for verifiable tasks)
- Table 28, 29, 30: Functional Diversity As Calculated by Single LLM-Judges
- Table 31, 32, 33: Checklist-Based Quality As Calculated by Single LLM-Judges
- Table 34-35: Functional Diversity & Checklist-Based Quality for 10 Generated Responses
- Table 36: Functional Diversity for Llama-3.1-8B-Instruct with DPO and GRPO
- Table 37 Functional Diversity for Llama-3.1-8B-Instruct with DARLING alignment