DyCoRM: Dynamic Criterion-Aware Reward Modeling for Text-to-Image Generation

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Why dynamic criteria?

Users judge images by the needs of a task. A single overall score can miss which details matter. The same image pair can receive different judgments under different criteria.



A Kolors



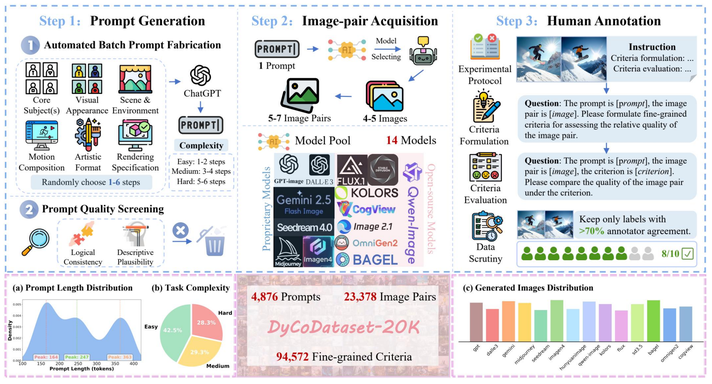
B Stable Diffusion 3.5

Criterion	Human preference
Wide-angle perspective	A
Ice surface detail	B

Human judgments from the paper. The active criterion changes the preferred image.

DyCoDataset-20K

Task-relevant criteria and human preference annotations for image pairs.



4,876 prompts

23,378 image pairs

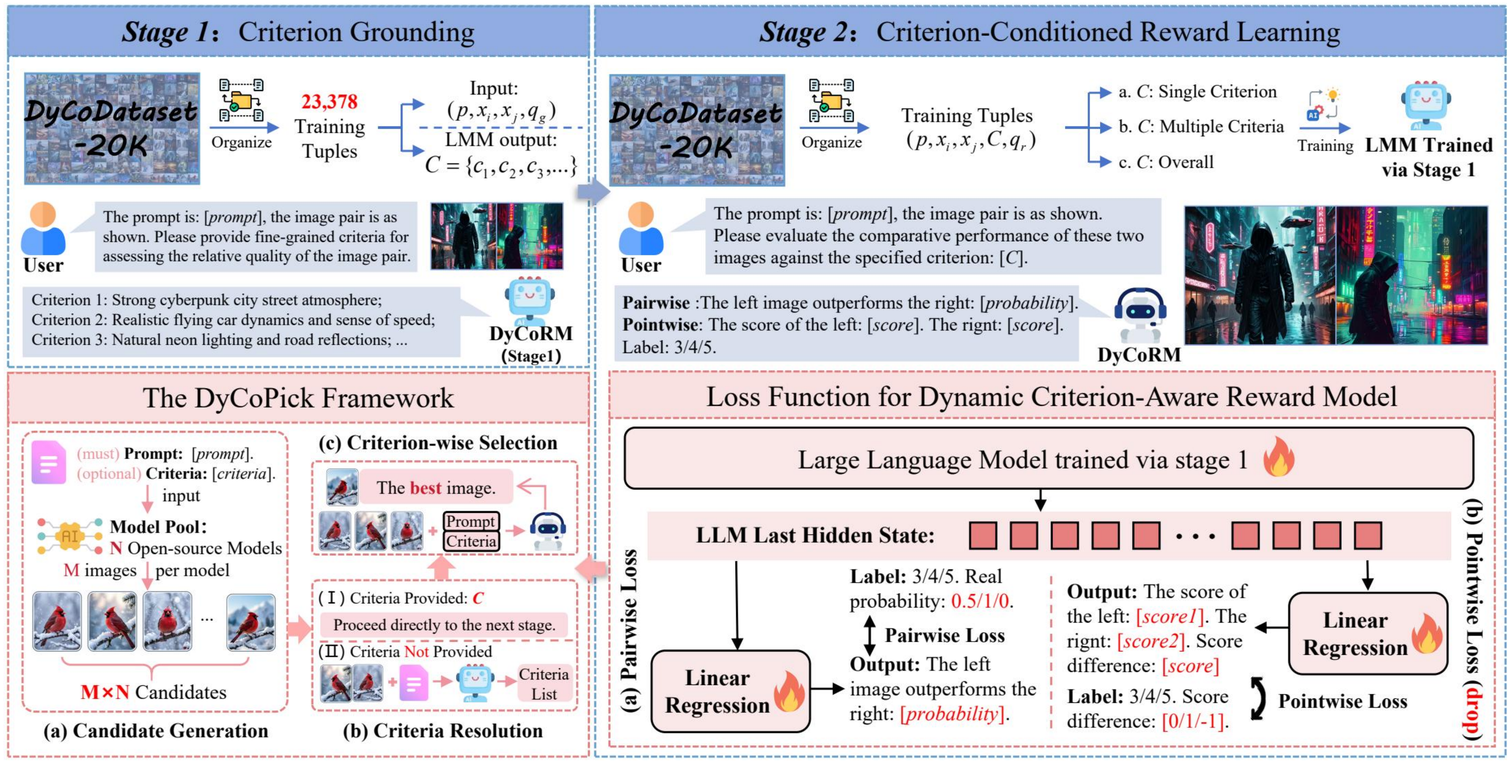
94,572 fine-grained criteria

Dataset and final model weight updates

github.com/2022qjy/DyCoRM

DyCoRM and DyCoPick

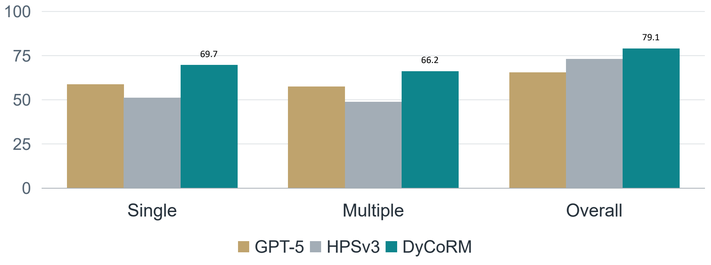
Ground task-relevant criteria, then compare image pairs under the selected requirements.



Final model: direct pairwise preference prediction. The figure also shows the discarded pointwise variant.

Results on DyCoBench-1K

Preference prediction accuracy (%)

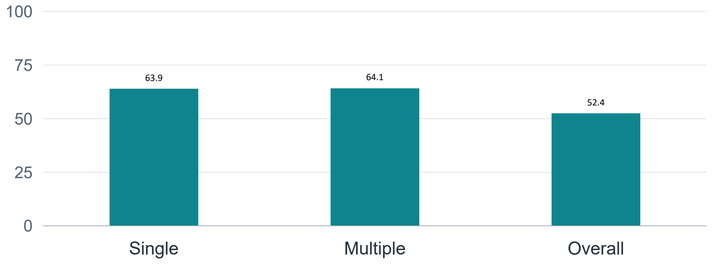


Single and multiple refer to supplied criteria. Specialized baselines receive criteria appended to the prompt.

Strongest gains under explicit criteria.

DyCoPick image selection

Human win rate against HPSv3 (%)



100 prompts, 32 candidates per prompt, five expert raters. Bradley-Terry estimates. Equal preference: 50%.

Human preferences support criterion-aware selection.