

Supplementary Materials: Few-Shot Joint Multimodal Entity-Relation Extraction via Knowledge-Enhanced Cross-modal Prompt Model

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1 PROMPT TEMPLATE

We present the template for prompting ChatGPT to generate background knowledge and answers. In Fig. 1, KECPM guides ChatGPT for auxiliary background knowledge generation. In Fig. 1 (a), in-context examples and answers in the template are selected from predefined artificial samples by our proposed Prompt Selection. Fig.

1 (b) is the template that encourages ChatGPT to engage in self-reflection. In Fig. 2, we guide ChatGPT to make direct predictions. In-context examples are selected from the same predefined artificial samples by the KECPM module. Note that the answers here are no longer human answers, but named entities and their corresponding relationships in the text.

Here are some content that people post on Twitter, and these content are composed of original text and image descriptions of the original text. Please note that the text and image descriptions here may or may not be relevant, so make your own judgment. Please follow the data annotation style and method reflected in the example I provided, comprehensively analyze the image description and the original text, determine which named entities, their corresponding types and their relations are included in the original text, and explain the reason for your judgment. Given a list of types: [person, location, organization, miscellaneous]. Given a list of relations: [parent, siblings, couple, neighbor, peer, chargesalumi, alternate names, place of residence, place of birth, member of, alternate names, subsidiary, locate at, contain, present in, awarded, race, religion, nationality, part of, held on]. The entity types and relations must be chosen from the given lists. Notice : just in 'Text', not include 'Image descriptions', and it is guaranteed that at least 1 relation will be in the sentence.

Text: RT @RiceBowlMY : Childhood memories ! Different generations of TOM and JERRY !

Image descriptions: the evolution of cats in different colors and animations.

Answer: The relation between TOM (person) and JERRY (person) is "neighbor".

Reasoning: Tom and Jerry is a cartoon, featuring a cat named Tom chasing a mouse named Jerry through their home, the streets, and around the world! These chases often involved Tom getting into awkward situations and being putting immense pain while Jerry toyed with him and got the last laugh. They usually live in the same house, so they are neighbors.



Text: RT @AnnForWisconsin : Thank you @CollegeDemsWI for making it up to Lodi to canvass for me ! I loved your energy ! !

Image descriptions: three girls standing next to a sign on a sidewalk

Answer: The relation between @CollegeDemsWI (person) and Lodi (person) is "alumni". Reasoning:

@CollegeDemsWI is the official account of College Democrats of Wisconsin.

She made up to Lodi, then we guess that they are alumni.

Text: RT @Teslarati : Elon Musk reiterates plan to use Boring Co. bricks for affordable housing

Image descriptions: the branding company logo on a brick wall

Answer:

(a) Prompt template for ChatGPT to generate knowledge

Please check the entities, relations and reasoning above. If it is correct or no named entity or relation mentioned in the original text, just repeat the answer. If not, please response the correct answer. There is no need to say the original text, prompt or the image description again. Answer:

(b) Prompt template for ChatGPT to self-reflection

Figure 1: The prompt template for ChatGPT is to generate background knowledge and make self-reflection.

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Text: RT @Patrici15767099 : John Kerry & amp ; Robert Mueller are high school buddies .
Image descriptions: a black and white photo of a group of men with red circles on them
Answer: The relation between John Kerry (person) and Robert Mueller (person) is alumi".

Text: RT @trashygaytweets : Kylie Jenner walking around Calabasas with her newborn
Image descriptions: a woman is pushing a baby stroller
Answer: The relation between Kylie Jenner (person) and Calabasas (location) is "place of residence"

Text: RT @womensart1 : Toronto- based artist Ali Harrison , known for her work with intricate paper cutouts # womensart
Image descriptions: a pair of hands holding a white paper origami lobster
Answer:

Prompt template for ChatGPT to directly obtain prediction

Figure 2: The prompt template for ChatGPT is used to directly generate the prediction.