

Some additions regarding URDM

A Prompt for CoT

The prompt mentioned in Subsection 3.4 is shown in Figure 3. In this prompt, we first assign a role identity to GPT-4 and then used a few-shot approach to help the model better understand the input-output format and the task content. Additionally, we employ a simple Chain of Thought (CoT) to guide the model in generating accurate results. This prompt is also used in Subsection 3.2 for the baseline GPT-4, in which the process of having the model consider the evidence is removed. When invoking GPT-4, we set the temperature to 0.85.

B Early Rumor Detection

As shown in Figure 1, rumor propagation is characterized by its large and widespread nature. Therefore, early detection of rumors can prevent their extensive dissemination. Therefore, we conducted a comparison of early rumor detection experiments. We split the time into one hour, two hours, three hours, four hours, five hours and the whole time, and captured tweets for each time period separately. In addition to our proposed model, we also selected two other models with the best performance for comparison. The results and analysis are presented in Figure 2.

According to Figure 2, we can make the following observations. In early rumor detection, the method we proposed still achieved satisfactory results. Due to the impact of noise, accuracy improves more slowly at times. This issue is not unique to our proposed model. The effectiveness of noise handling also indirectly reflects the model’s robustness. Since our model is comprehensive, it ultimately produces a satisfactory result.

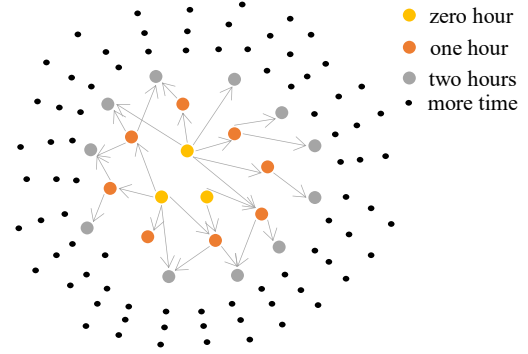
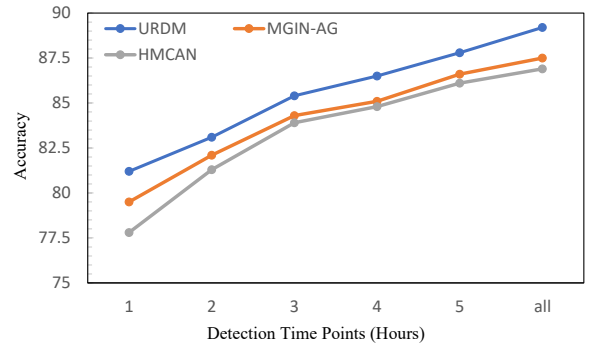
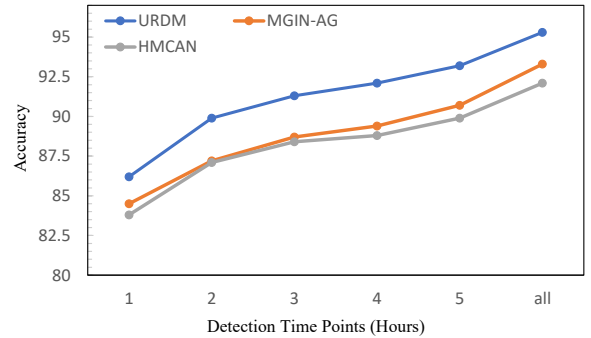


Figure 1: The purpose of early rumor detection is the spread speed of the rumor is fast.



(a) PHEME



(b) Weibo

Figure 2: Early rumor detection on two datasets.

Role	<p>You are a skilled detective adept at finding evidence to determine whether an event is true or false based on the evidence gathered.</p> <p>Role assignment</p>
prompt	<p>You need to find strong evidence (either supporting or opposing) based on the given claims, and then determine whether it is a rumor based on the claims and the evidence you provide.</p> <p>CoT task assignment</p> <p>input format:"Tweet ID":[twitterid],"Content":[claim] Output format(json format):{"Tweet ID":[twitterid],"Content":[claim],"Evidence":[evidence],"Label":[label]}</p> <p>Specified format</p> <p>example input: 935,Field near printers has become a makeshift helicopter pad for airforce and gendarmerie Puma helicopters #charliehebdo 123,"""Love is stronger than hate"" http://t.co/MBLPj31t8i #CharlieHebdo http://t.co/3BeTrwpgCN"</p> <p>example output: {"Tweet ID":"935","Content": "Field near printers has become a makeshift helicopter pad for airforce and gendarmerie Puma helicopters #charliehebdo","Evidence":"There is no official confirmation or reliable source corroborating that a field near the printers has been converted into a makeshift helicopter pad for airforce and gendarmerie Puma helicopters. This information could be speculative or unverified.","Label":"Rumor"}, {"Tweet ID":"123","Content": "\"Love is stronger than hate\" http://t.co/MBLPj31t8i #CharlieHebdo http://t.co/3BeTrwpgCN","Evidence":"The statement \"Love is stronger than hate\" is a general sentiment or opinion rather than a factual claim that requires verification. It expresses an emotional response likely in the context of the Charlie Hebdo incident. The inclusion of a link and hashtags does not necessitate factual evidence to support the sentiment, as it is not presenting a verifiable event or piece of information Therefore, it is labeled as non-rumor.","Label":"Non-rumor"}</p> <p>Few-shot guidance</p> <p>You need to analyze and solve the following:</p>

Figure 3: The prompt used in CoT