**Settings used:**

Dataset: financial\_phrasebank -> sentences\_allagree

LLM: Phi-2 (non-instruction tuned)

Random Samples: 1000 Samples -> Seed 1

1. 0.389

Instruct: You are a professional News Article Sentiment Classification agent. You need to read the below news article and classify its sentiment as a single number, 1 being 'Negative', 2 being 'Neutral', and 3 being 'Positive'. Give only a single number as output, no additional text is needed.\n Sentiment Classification news article:

1. 0.596 (Numbers from 1,2,3 to 0,1,2)

Instruct: You are a professional News Article Sentiment Classification agent. You need to read the below news article and classify its sentiment as a single number, 0 being 'Negative', 1 being 'Neutral', and 2 being 'Positive'. Give only a single number as output, no additional text is needed.\n Sentiment Classification news article:

1. 0.641 (Agent -> Expert | Read + Analyze news)

Instruct: You are a professional News Article Sentiment Classification expert. You need to read the below news article, analyze it, and classify its sentiment as a single number, 0 being 'Negative', 1 being 'Neutral', and 2 being 'Positive'. Give only a single number as output, no additional text is needed.\n Sentiment Classification news article:

1. 0.65 (News -> Financial News | Analyze news -> Read while focusing on sentiment)

Instruct: You are a Financial News Article Sentiment Classification expert. You need to read the below financial news article while focusing on its sentiment, and classify its sentiment as a single number, 0 being 'Negative', 1 being 'Neutral', and 2 being 'Positive'. Give only a single number as output, no additional text is needed.\n Sentiment Classification news article:

1. 0.642 (More concise)

Instruct: As a Financial News Article Sentiment Classification expert, analyze the sentiment of the following financial news article and classify its sentiment as a single number, 0 being 'Negative', 1 being 'Neutral', and 2 being 'Positive'. Provide only a single number as output, without additional text.\n Sentiment Classification news article:

1. 0.654 (Same as 5, but with an extra space at the end of the prompt)

Instruct: As a Financial News Article Sentiment Classification expert, analyze the sentiment of the following financial news article and classify its sentiment as a single number, 0 being 'Negative', 1 being 'Neutral', and 2 being 'Positive'. Provide only a single number as output, without additional text.\n Sentiment Classification news article:

1. 0.687 (single-shot prompting)

Instruct: As a Financial News Article Sentiment Classification expert, analyze the sentiment of the following financial news article and classify its sentiment as a single number, 0 being 'Negative', 1 being 'Neutral', and 2 being 'Positive'. Provide only a single number as output, without additional text. Below is an example to illustrate the sentiment classification:\n Example: 'In January-September 2009 , the Group 's net interest income increased to EUR 112.4 mn from EUR 74.3 mn in January-September 2008 .' - Output:2 \n Sentiment Classification news article:

1. 0.614 (single-shot prompting ‘\n’ experiment space only after.)

Instruct: As a Financial News Article Sentiment Classification expert, analyze the sentiment of the following financial news article and classify its sentiment as a single number, 0 being 'Negative', 1 being 'Neutral', and 2 being 'Positive'. Provide only a single number as output, without additional text. Below is an example to illustrate the sentiment classification:\n Example: 'In January-September 2009 , the Group 's net interest income increased to EUR 112.4 mn from EUR 74.3 mn in January-September 2008 .' - Output:2\n Sentiment Classification news article:

1. 0.667 (7 + space only after at end of input -> + "'\n Output:")
2. 0.713 (7 + double space at end of input -> + "' \n Output:")
3. 0.567 (Three-shot prompting, no spaces between example \n’s)

Instruct: As a Financial News Article Sentiment Classification expert, analyze the sentiment of the following financial news article and classify its sentiment as a single number, 0 being 'Negative', 1 being 'Neutral', and 2 being 'Positive'. Provide only a single number as output, without additional text. Below are 3 examples to illustrate the sentiment classification:\nExample 1: 'Finnish electronics manufacturing services EMS company Elcoteq SE posted a net loss of 66.4 mln euro $ 91.2 mln for the first half of 2007 , compared to a net profit of 7.1 mln euro $ 9.8 mln for the same period of 2006 .' - Output:0\nExample 2: 'The negotiations concern personnel of Cencorp Corporation and Singulase Oy as whole in Finland and in Sweden , the company said .' - Output:1\nExample 3: 'In January-September 2009 , the Group 's net interest income increased to EUR 112.4 mn from EUR 74.3 mn in January-September 2008 .' - Output:2 \n Sentiment Classification news article:

1. 0.588 (Three-shot prompting, double spaces around example \n’s)

Instruct: As a Financial News Article Sentiment Classification expert, analyze the sentiment of the following financial news article and classify its sentiment as a single number, 0 being 'Negative', 1 being 'Neutral', and 2 being 'Positive'. Provide only a single number as output, without additional text. Below are 3 examples to illustrate the sentiment classification: \n Example 1: 'Finnish electronics manufacturing services EMS company Elcoteq SE posted a net loss of 66.4 mln euro $ 91.2 mln for the first half of 2007 , compared to a net profit of 7.1 mln euro $ 9.8 mln for the same period of 2006 .' - Output:0 \n Example 2: 'The negotiations concern personnel of Cencorp Corporation and Singulase Oy as whole in Finland and in Sweden , the company said .' - Output:1 \n Example 3: 'In January-September 2009 , the Group 's net interest income increased to EUR 112.4 mn from EUR 74.3 mn in January-September 2008 .' - Output:2 \n Sentiment Classification news article:

1. 0.666 (Two-shot prompting, single space for example 1, double for example 2)

Instruct: As a Financial News Article Sentiment Classification expert, analyze the sentiment of the following financial news article and classify its sentiment as a single number, 0 being 'Negative', 1 being 'Neutral', and 2 being 'Positive'. Provide only a single number as output, without additional text. Below is an example to illustrate the sentiment classification:\n Example 1: 'Finnish electronics manufacturing services EMS company Elcoteq SE posted a net loss of 66.4 mln euro $ 91.2 mln for the first half of 2007 , compared to a net profit of 7.1 mln euro $ 9.8 mln for the same period of 2006 .' - Output:0 \n Example 2: 'In January-September 2009 , the Group 's net interest income increased to EUR 112.4 mn from EUR 74.3 mn in January-September 2008 .' - Output:2 \n Sentiment Classification news article:

1. 0.631 (Two-shot prompting, double space for example 1, 2 | Is an ex -> are two ex)
2. 0.61 (Two-shot prompting, single space for example 1, 2 | Is an ex -> are two ex)
3. 0.675 (One-shot | single space for ex 1 | Illustrate -> Demonstrate | Diff ex from 10.)
4. 0.704 (Two-shot | good hand-picked examples | Ex 2 after Ex 1 helped 3% )

"Instruct: As a Financial News Article Sentiment Classification expert, analyze the sentiment of the following financial news article and classify its sentiment as a single number, 0 being 'Negative', 1 being 'Neutral', and 2 being 'Positive'. Provide only a single number as output, without additional text. Below is an example to illustrate the sentiment classification:\n Example: 'Operating margin , however , slipped to 14.4 % from 15.1 % , dragged down by a poor performance in enterprise solutions .' - Output:0 \n Example: 'In January-September 2009 , the Group 's net interest income increased to EUR 112.4 mn from EUR 74.3 mn in January-September 2008 .' - Output:2 \n Sentiment Classification news article: "

1. 0.736 (Shortening the sentence)

Instruct: As a Financial News Article Sentiment Classification expert, analyze and classify the sentiment of the following news article as a single number, 0 being 'Negative', 1 being 'Neutral', and 2 being 'Positive'. Provide only a single number as output, without additional text. Below is a sentiment classification example:\n Example: 'Operating margin , however , slipped to 14.4 % from 15.1 % , dragged down by a poor performance in enterprise solutions .' - Output:0 \n Example: 'In January-September 2009 , the Group 's net interest income increased to EUR 112.4 mn from EUR 74.3 mn in January-September 2008 .' - Output:2 \n Sentiment Classification news article:

1. 0.728 (removed , without additional text)

Error notes:

* Adding extra spaces makes a big difference. Space after Output: leads to errors.
* Concise rephrasing -> Failed due to the classes part. It liked “0 being 'Negative', 1 being 'Neutral', and 2 being 'Positive'”, but “hated Negative (0), Neutral (1), or Positive (2)”.
* No spaces on both sides of \n to divide prompt examples from other sections leads to error. Space before \n leads to same error. Space only after \n fixed issue. But the model still has better scores when spaces are on both sides of \n. I guess, despite the space before \n causes the output to be more inline with instructions (no more tokens after), the segregation of subsections from the spaces on each side leads to better overall results. Similar results obtained by changing \n on last part of input (+ "'\n Output:")
* Different examples give different accuracies. “***Its 168 asset management experts manage assets worth over EUR 35 billion “.*** sentiment was way off when I used *“****In January-September 2009 , the Group 's net interest income increased to EUR 112.4 mn from EUR 74.3 mn in January-September 2008 .****”* ***The bond , with a maturity of five years , is part of the bank 's domestic bond program .*** This sentence yielded a accuracy of 0.441 from 0.68

***Single shot:***

Precision: [0.49023438 0.67057444 0.97777778 0. ]

Recall: [0.82838284 0.82242991 0.07719298 0. ]

F1 Score: [0.61595092 0.73877946 0.14308943 0. ]

Acc 0.635

No shot:

Precision: [0.47169811 0.63170163 0.87878788]

Recall: [0.08250825 0.97411934 0.10175439]

F1 Score: [0.14044944 0.76640271 0.18238994]

Acc 0.635

2 Shot:

Precision: [0.7020202 0.73820483 0.93076923]

Recall: [0.91749175 0.92235802 0.2122807 ]

F1 Score: [0.79542203 0.82007031 0.34571429]

Acc 0.7429328621908127

A screenshot of a computer

Description automatically generated

3-shot

Acc: 0.38515901060070673

Precision: [0.34246575 0.94594595 0.38203957]

Recall: [0.99009901 0.05032351 0.88070175]

F1 Score: [0.50890585 0.09556314 0.5329087 ]