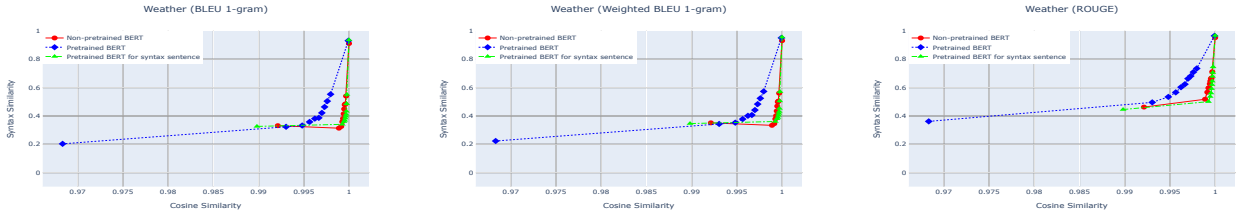
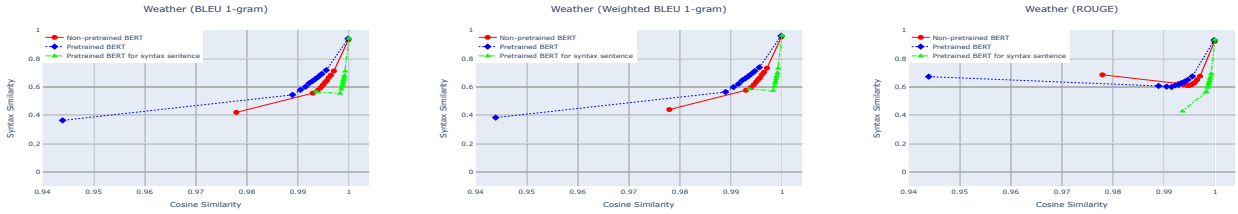
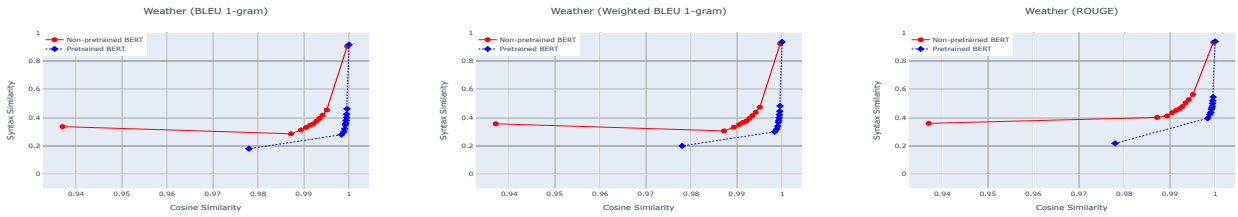


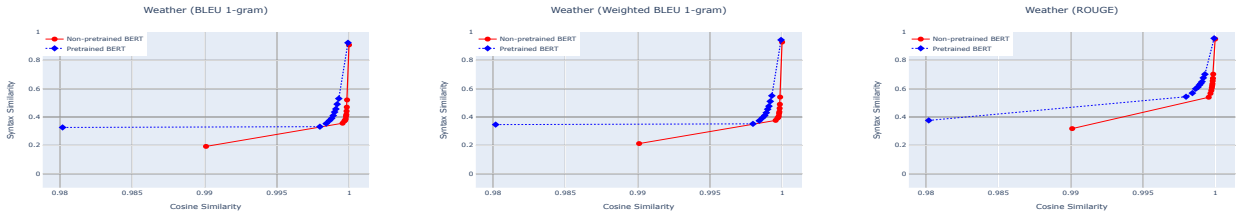
(a) The dependency parsing-type syntactic structure in the syntax reader was used.



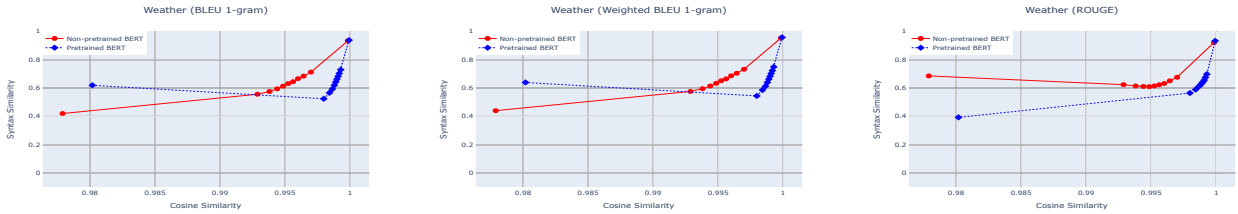
(b) The phrase structure parsing-type syntactic structure in the syntax reader was used.



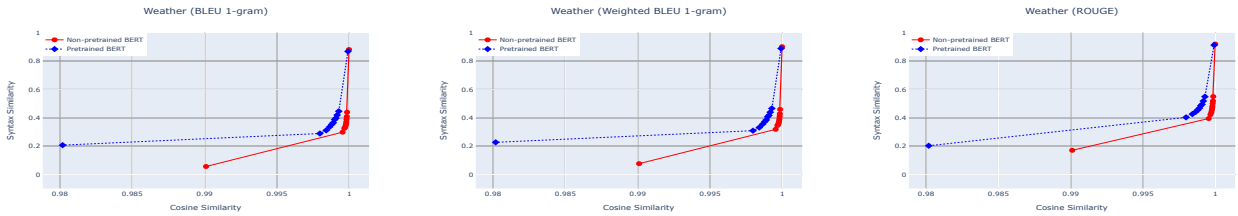
(c) The POS tagging-type syntactic structure in the syntax reader was used.



(d) The dependency parsing for joint model-type syntactic structure in the syntax reader was used.

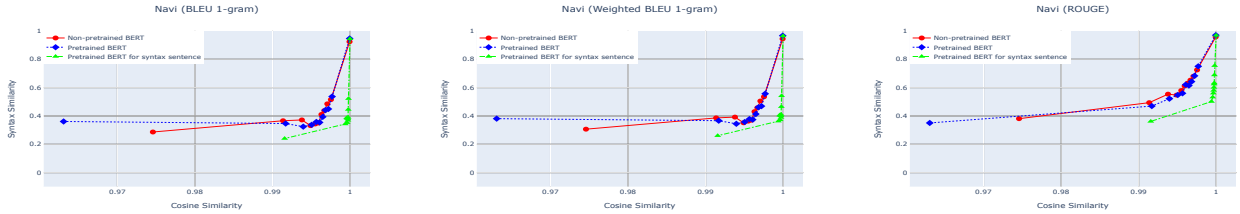


(e) The phrase structure parsing for joint model-type syntactic structure in the syntax reader was used.

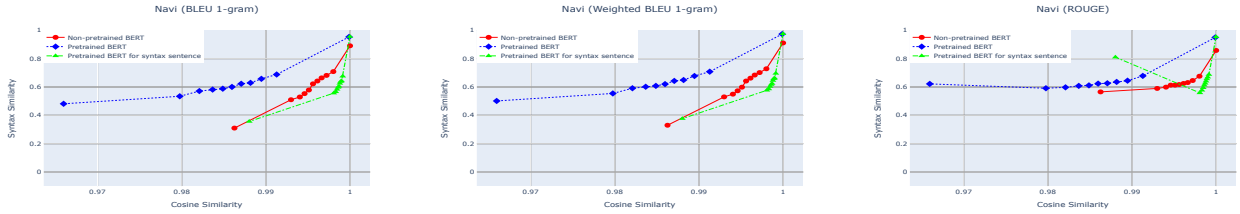


(f) The POS tagging for joint model-type syntactic structure in the syntax reader was used.

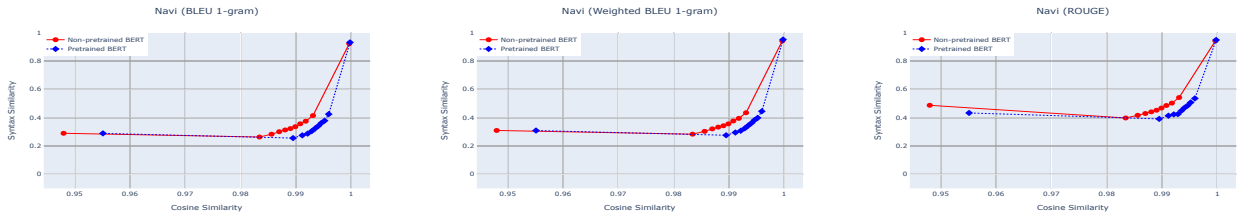
Figure 1: Graph depicting relationship between cosine similarity and syntax similarities in the Weather dataset. In the graphs, the red line depicts the non-pretrained BERT, the blue line indicates the pretrained BERT, and the light green line depicts the pretrained BERT for syntax sentences.



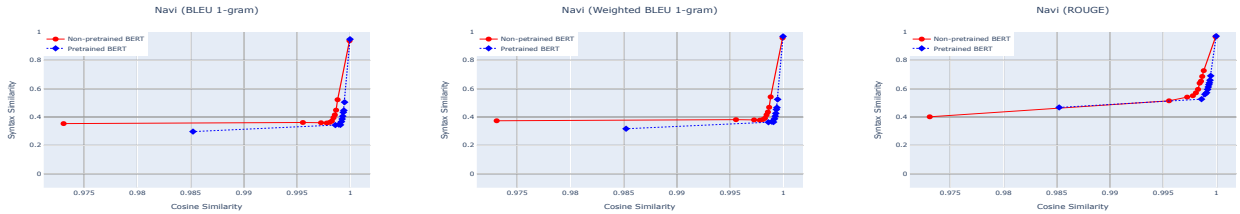
(a) The dependency parsing-type syntactic structure in the syntax reader was used.



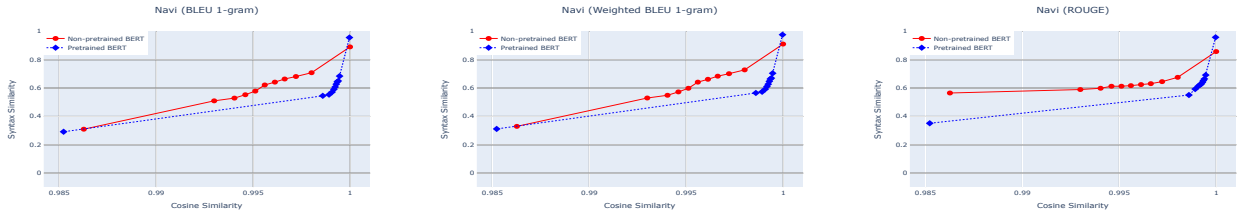
(b) The phrase structure parsing-type syntactic structure in the syntax reader was used.



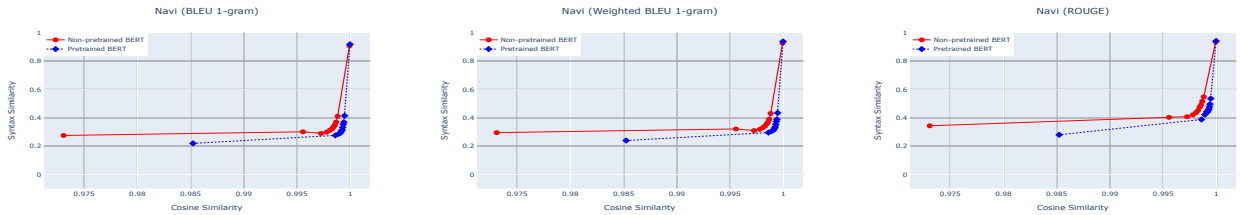
(c) The POS tagging-type syntactic structure in the syntax reader was used.



(d) The dependency parsing for joint model-type syntactic structure in the syntax reader was used.

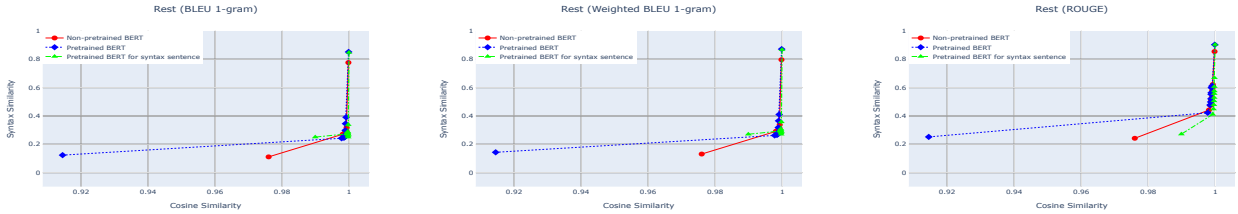


(e) The phrase structure parsing for joint model-type syntactic structure in the syntax reader was used.

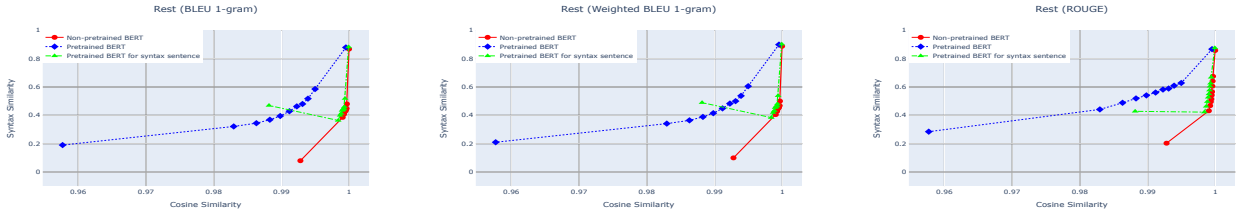


(f) The POS tagging for joint model-type syntactic structure in the syntax reader was used.

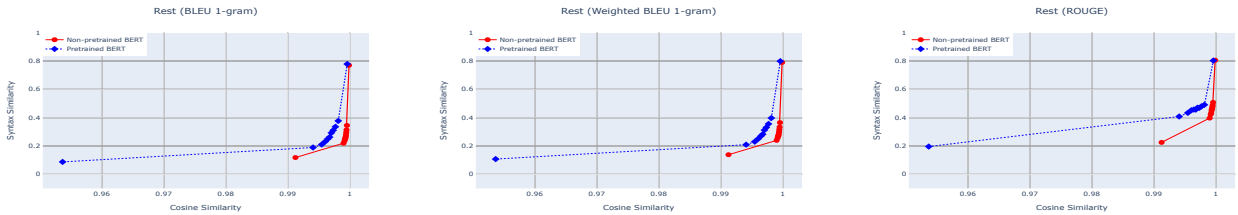
Figure 2: Graph depicting relationship between cosine similarity and syntax similarities in the Navi dataset. In the graphs, the red line depicts the non-pretrained BERT, the blue line indicates the pretrained BERT, and the light green line depicts the pretrained BERT for syntax sentences.



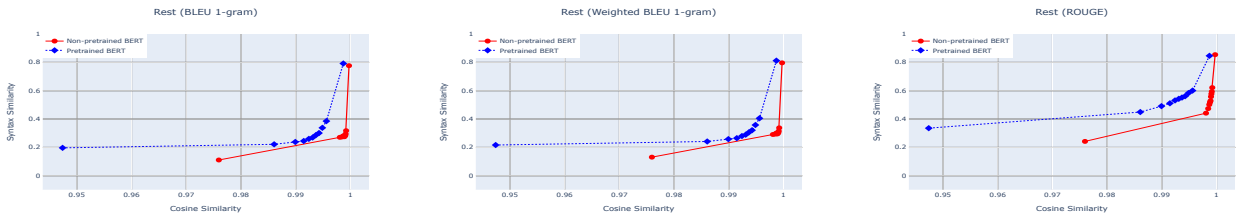
(a) The dependency parsing-type syntactic structure in the syntax reader was used.



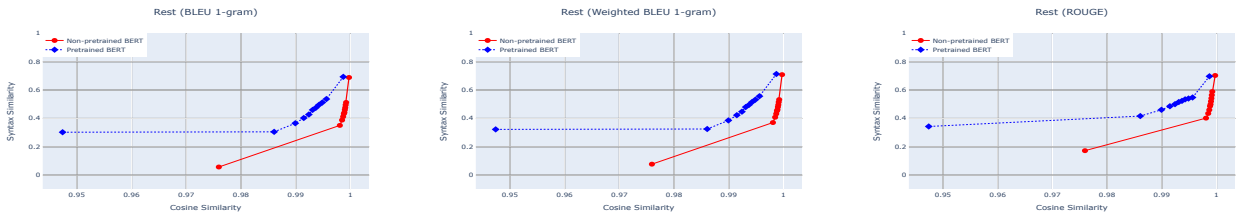
(b) The phrase structure parsing-type syntactic structure in the syntax reader was used.



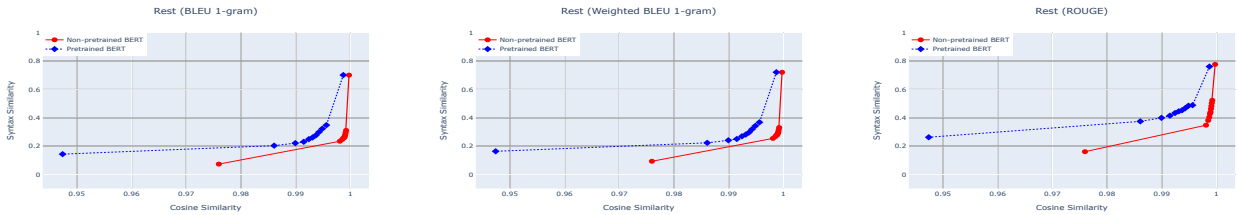
(c) The POS tagging-type syntactic structure in the syntax reader was used.



(d) The dependency parsing for joint model-type syntactic structure in the syntax reader was used.

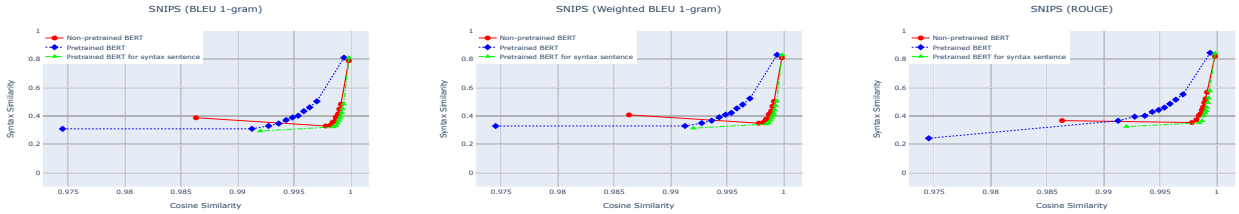


(e) The phrase structure parsing for joint model-type syntactic structure in the syntax reader was used.

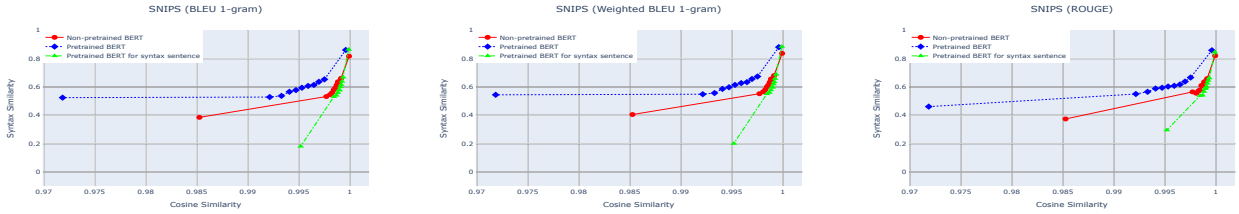


(f) The POS tagging for joint model-type syntactic structure in the syntax reader was used.

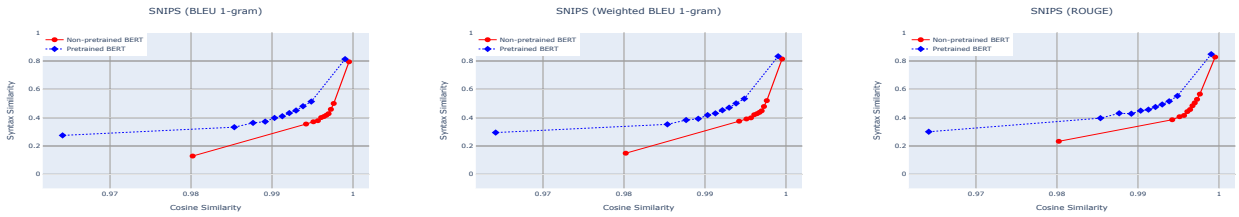
Figure 3: Graph depicting relationship between cosine similarity and syntax similarities in the Rest dataset. In the graphs, the red line depicts the non-pretrained BERT, the blue line indicates the pretrained BERT, and the light green line depicts the pretrained BERT for syntax sentences.



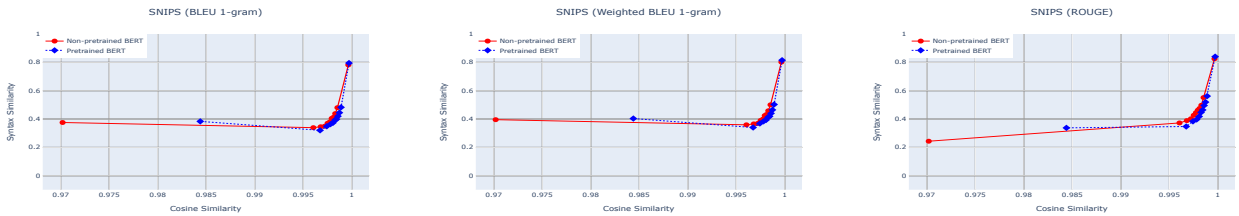
(a) The dependency parsing-type syntactic structure in the syntax reader was used.



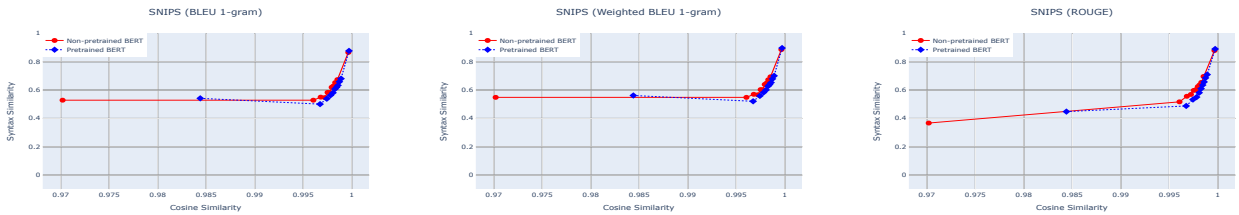
(b) The phrase structure parsing-type syntactic structure in the syntax reader was used.



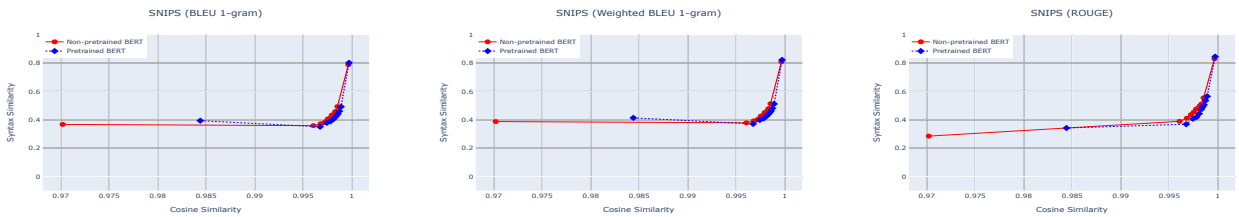
(c) The POS tagging-type syntactic structure in the syntax reader was used.



(d) The dependency parsing for joint model-type syntactic structure in the syntax reader was used.

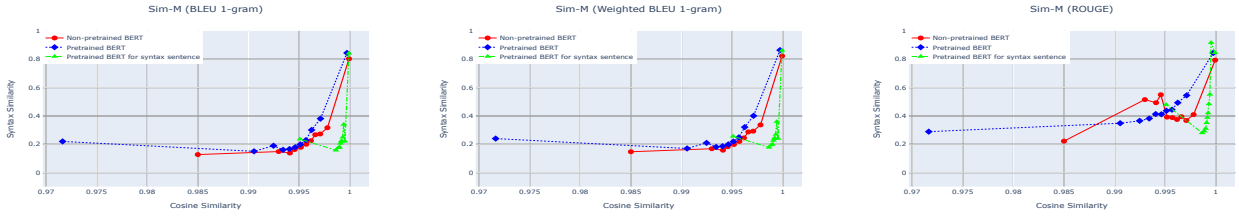


(e) The phrase structure parsing for joint model-type syntactic structure in the syntax reader was used.

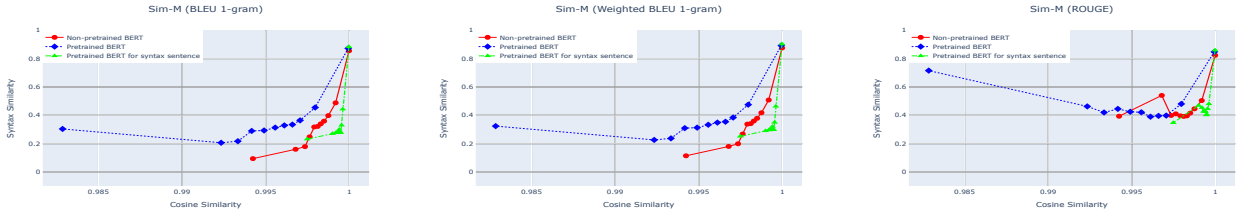


(f) The POS tagging for joint model-type syntactic structure in the syntax reader was used.

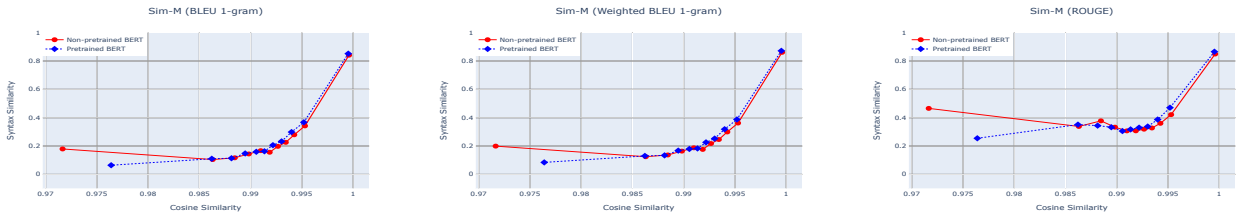
Figure 4: Graph depicting relationship between cosine similarity and syntax similarities in the SNIPS dataset. In the graphs, the red line depicts the non-pretrained BERT, the blue line indicates the pretrained BERT, and the light green line depicts the pretrained BERT for syntax sentences.



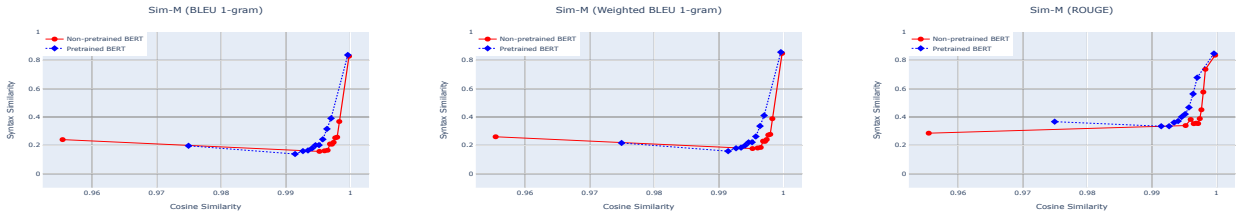
(a) The dependency parsing-type syntactic structure in the syntax reader was used.



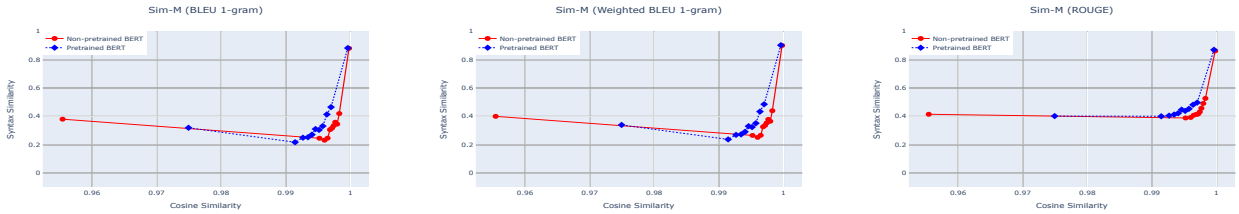
(b) The phrase structure parsing-type syntactic structure in the syntax reader was used.



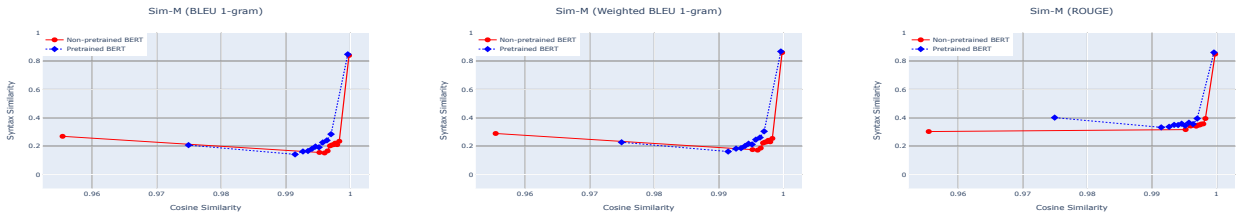
(c) The POS tagging-type syntactic structure in the syntax reader was used.



(d) The dependency parsing for joint model-type syntactic structure in the syntax reader was used.

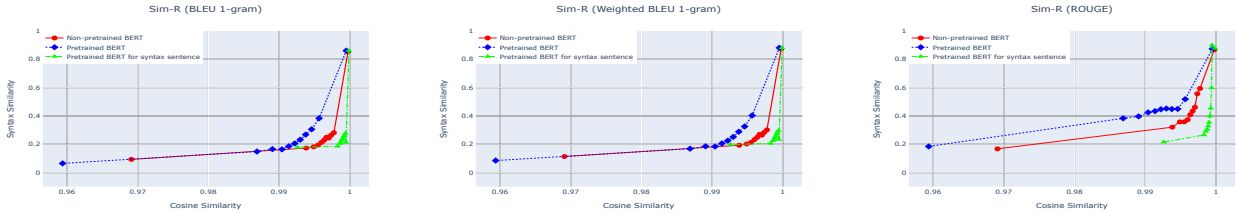


(e) The phrase structure parsing for joint model-type syntactic structure in the syntax reader was used.

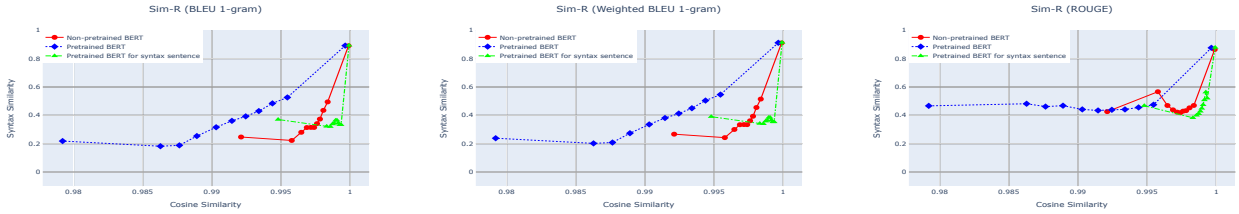


(f) The POS tagging for joint model-type syntactic structure in the syntax reader was used.

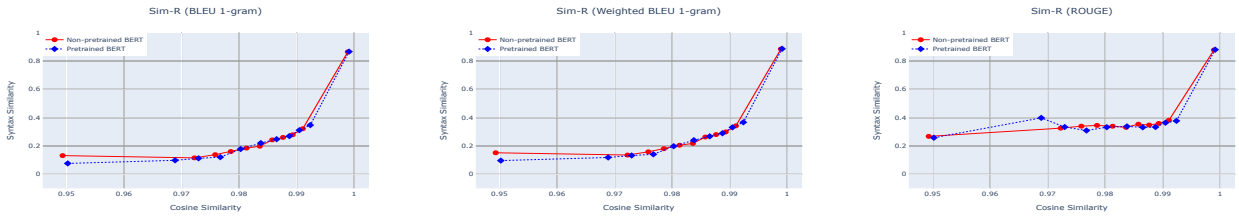
Figure 5: Graph depicting relationship between cosine similarity and syntax similarities in the Sim-M dataset. In the graphs, the red line depicts the non-pretrained BERT, the blue line indicates the pretrained BERT, and the light green line depicts the pretrained BERT for syntax sentences.



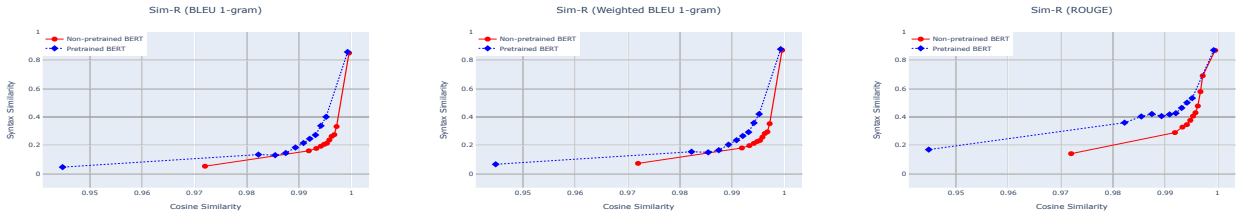
(a) The dependency parsing-type syntactic structure in the syntax reader was used.



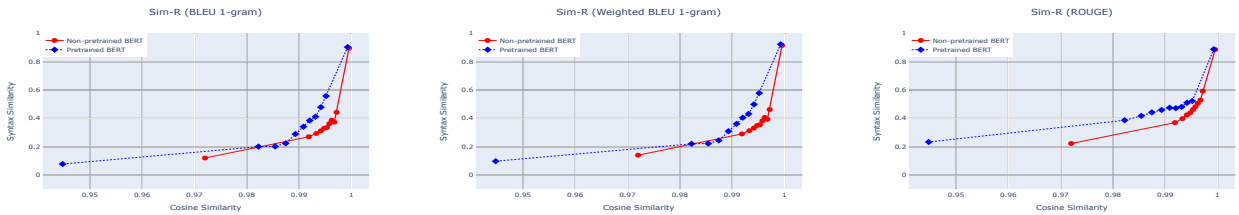
(b) The phrase structure parsing-type syntactic structure in the syntax reader was used.



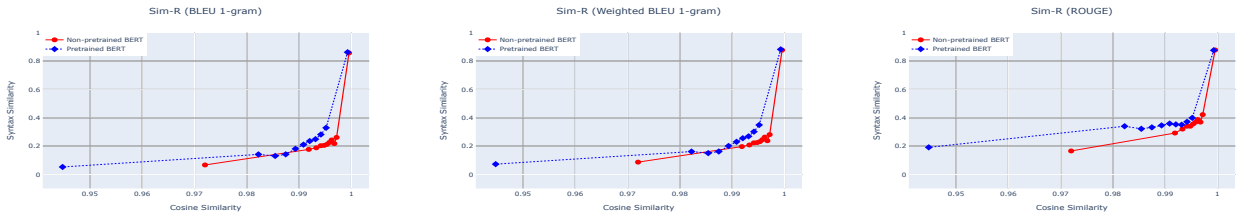
(c) The POS tagging-type syntactic structure in the syntax reader was used.



(d) The dependency parsing for joint model-type syntactic structure in the syntax reader was used.

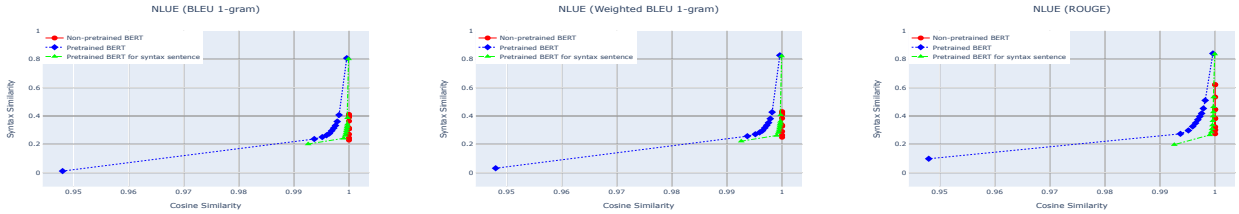


(e) The phrase structure parsing for joint model-type syntactic structure in the syntax reader was used.

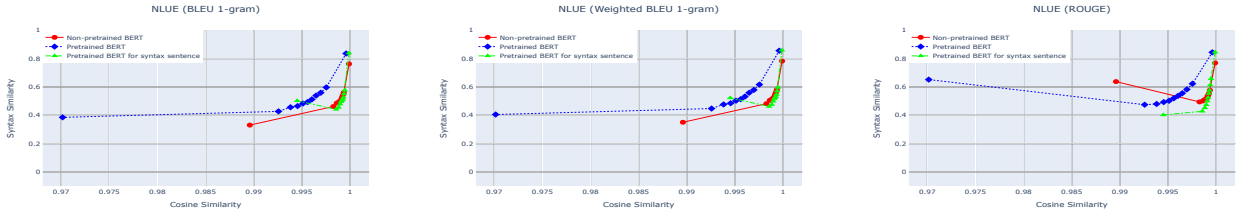


(f) The POS tagging for joint model-type syntactic structure in the syntax reader was used.

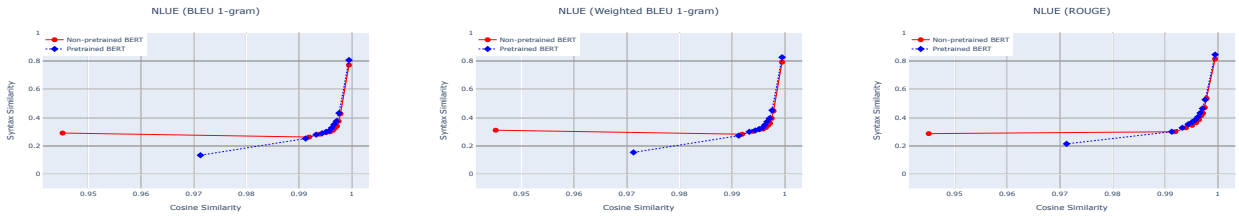
Figure 6: Graph depicting relationship between cosine similarity and syntax similarities in the Sim-R dataset. In the graphs, the red line depicts the non-pretrained BERT, the blue line indicates the pretrained BERT, and the light green line depicts the pretrained BERT for syntax sentences.



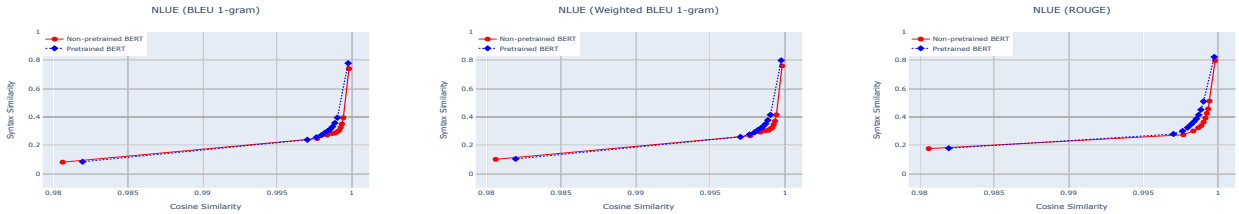
(a) The dependency parsing-type syntactic structure in the syntax reader was used.



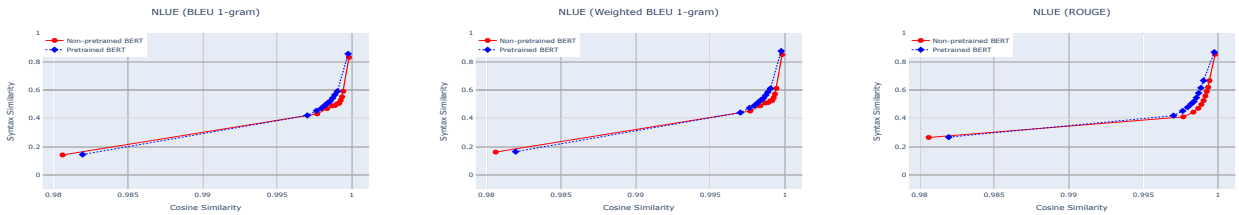
(b) The phrase structure parsing-type syntactic structure in the syntax reader was used.



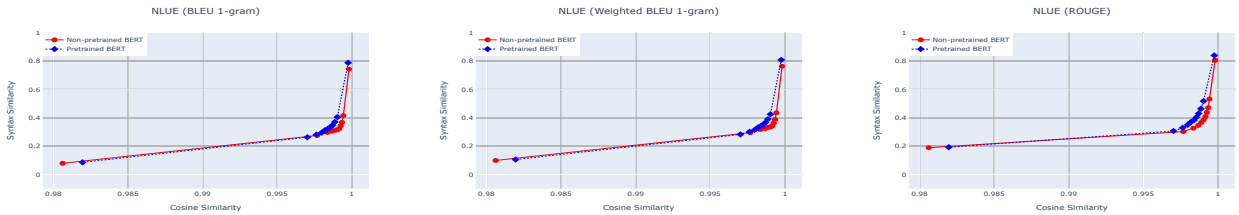
(c) The POS tagging-type syntactic structure in the syntax reader was used.



(d) The dependency parsing for joint model-type syntactic structure in the syntax reader was used.



(e) The phrase structure parsing for joint model-type syntactic structure in the syntax reader was used.



(f) The POS tagging for joint model-type syntactic structure in the syntax reader was used.

Figure 7: Graph depicting relationship between cosine similarity and syntax similarities in the NLUE dataset. In the graphs, the red line depicts the non-pretrained BERT, the blue line indicates the pretrained BERT, and the light green line depicts the pretrained BERT for syntax sentences.