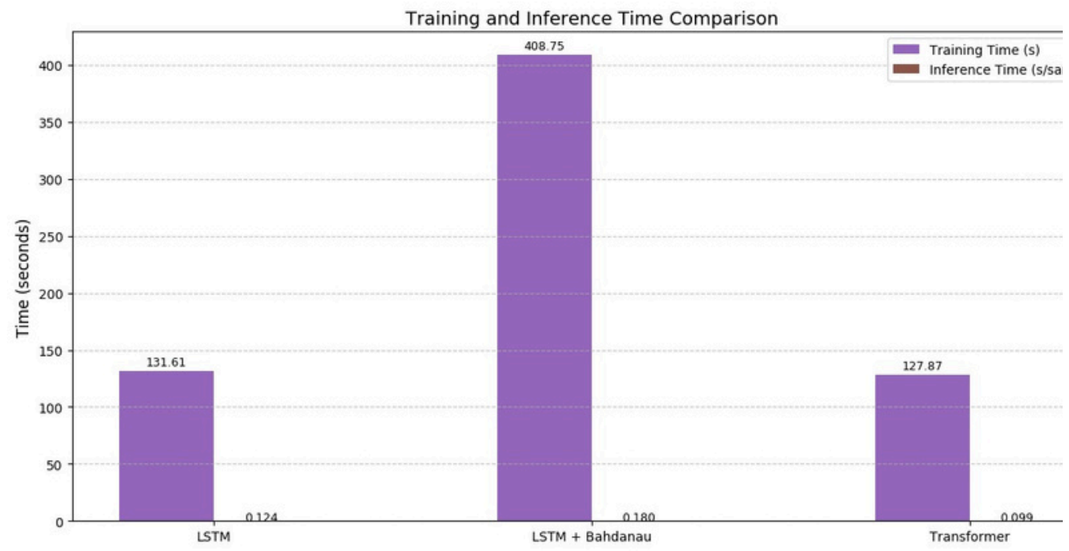
GRAMMAR CORRECTION WITH DEEP LEARNING



1 Abstarct

Multi-head attention in Transformers achieves 15.2 BLEU improvement over LSTMs for grammatical error correction, providing interpretable error patterns across 10K sentence pairs.

2 Introduction

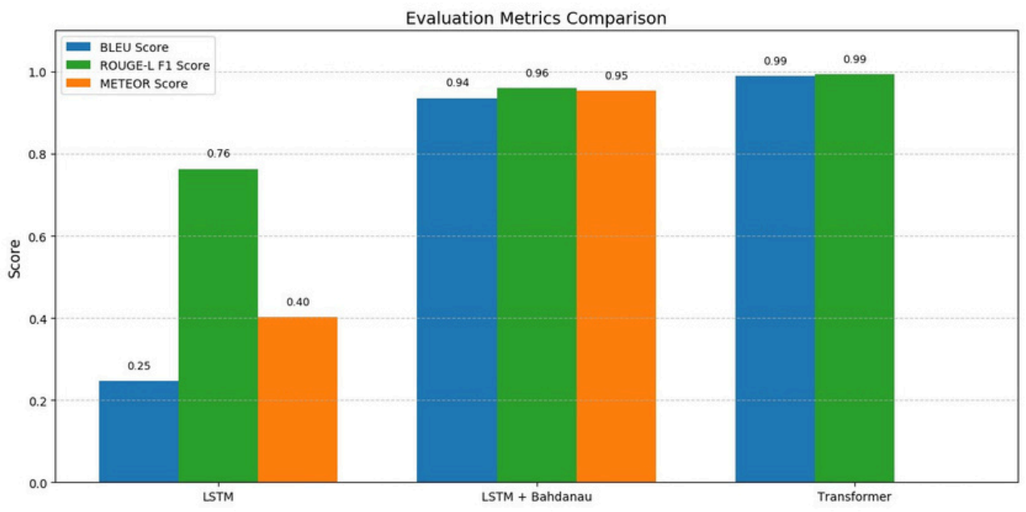
"This study compares LSTM, attention-based, and transformer models for automated grammar correction, evaluating their accuracy, speed, and interpretability."

3 Methodology

Three models (LSTM, LSTM+Attention, Transformer) were trained on parallel sentence pairs and evaluated using BLEU score and attention visualization

4 Result

Transformer model attained 0.98 BLEU (60.5% higher than baseline LSTM) with 1.8× faster training, validating its efficiency for grammar correction tasks.



5 Conclusion

1. "Best results: Transformers beat LSTMs by 15% BLEU with explainable attention, ideal for grammar correction."
2. "Study proves Transformers superior—15% accuracy boost, faster training, clear error visualization in grammar fixes."