

## **ABSTRACT**

*The ability to recognize entities in text, including people, places, dates, and organizations, makes Named Entity Recognition very important for many Natural Language Processing applications. In recent years, BiLSTM-based models, especially BiLSTM-CRF have gained popularity for entity extraction due to their efficiency. However, there is still a challenge that it is difficult to recognize entities precisely in complex texts. This study investigates how well BiLSTM-CRF, BiLSTM, and CRF perform in identifying person entities in the English version of CoNLL 2003 dataset. The results showed that the CRF model achieved a precision of 84.67%, a recall of 50%, and an F1-Score of 87.24%. The BiLSTM model had the highest precision at 51.5%, with a recall of 82.45% and an F1-Score of 86.75%. Meanwhile, the BiLSTM-CRF model demonstrated a precision of 88.68%, a recall of 67.55%, and an F1-Score of 76.56%.*

**Keywords:** *named entity recognition, CRF, BiLSTM, BiLSTM-CRF*