

# **Text Classification in Natural Language Processing**

**Venkata Mahesh Babu Batta**

<https://orcid.org/0000-0002-1029-6402>

M.Tech, Department of CSE

University College of Engineering, Osmania University, Hyderabad, Telangana, India

**Abstract:** *This paper presents an overview of text classification techniques, focusing on the pre-processing steps, feature extraction methods, and model selection strategies employed in the process. Algorithms such as Naive Bayes, Support Vector Machines (SVM), logistic regression, and neural networks are used. Furthermore, recent advancements in deep learning models for text classification, including Convolutional Neural Networks (CNNs) and Recurrent Neural Networks (RNNs) are used. Comprehensive understanding of text classification methodologies in NLP and insights into current trends and challenges in the field are mentioned*

**Keywords:** Natural Language Processing(NLP), Python

## **REFERENCES:**

- [1]. Jurafsky, D., & Martin, J. H. (2019). *Speech and Language Processing* (3rd ed.). Pearson.
- [2]. Manning, C. D., Raghavan, P., & Schütze, H. (2008). *Introduction to Information Retrieval*. Cambridge University Press.
- [3]. Bird, S., Klein, E., & Loper, E. (2009). *Natural Language Processing with Python*. O'Reilly Media.
- [4]. Goldberg, Y. (2016). A Primer on Neural Network Models for Natural Language Processing. *Journal of Artificial Intelligence Research*, 57, 345-420.
- [5]. Young, T., Hazarika, D., Poria, S., & Cambria, E. (2018). Recent Trends in Deep Learning Based Natural Language Processing. *IEEE Computational Intelligence Magazine*, 13(3), 55-75.
- [6]. Zhang, Y., & Wallace, B. (2017). A Sensitivity Analysis of (and Practitioners' Guide to) Convolutional Neural Networks for Sentence Classification. *arXiv preprint arXiv:1510.03820*.
- [7]. Vaswani, A., et al. (2017). Attention Is All You Need. In *Proceedings of the 31st International Conference on Neural Information Processing Systems (NeurIPS)*.
- [8]. Devlin, J., Chang, M. W., Lee, K., & Toutanova, K. (2018). BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding. *arXiv preprint arXiv:1810.04805*