



## **J.B. INSTITUTE OF ENGINEERING AND TECHNOLOGY (UGC AUTONOMOUS)**

(Accredited by NBA&NAAC, Approved by AICTE & Permanently Affiliated to JNTUH  
Hyderabad)  
Yenkapally (Vi), Moinabad (M). P.O. Himayat Nagar, RR District, Hyderabad 500075  
**Department of Electronics and Computer Engineering**



**Add on Program on**

### **NATURAL LANGUAGE PROCESSING Report**

**Module Number: 4**

**Key Topics Covered: TRANSFORMERS AND ATTENTION MECHANISM**

**CORE COMPONENTS OF TRANSFORMER**

**ENCODER AND DECODER**

**TYPES OF ATTENTION**

**POSITIONAL ENCODING**

**LIMITATIONS OF RNNs**

**Resource Person(s):** Mrs.K.Pooja and Mr.M.Syam Babu

**Date and Time of Session: 22.11.2025 and 1.30pm to 3.30pm**

**Duration:2h**

**Mode of Delivery: Face to Face and Power point presentation**

**Target Audience: 2nd, 3rd and 4th year students**

**Number of Participants: 32**

**Venue:A-403**

### **Objectives of the Course Module:**

- To make human-computer communication more intuitive and efficient by allowing computers to understand and process language in its natural form.
- To develop machines that can comprehend and react to spoken and written text, accounting for complexities like slang, accents, and grammar.
- To enable computers to produce coherent, contextually appropriate, and useful text or speech in response to human input.



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### Expected Learning Outcomes of the Module:

By the end of the module, students could:

- The ultimate goal is to enable computers to understand and process human language as effectively as humans do.
- NLP used for processing Chatbots, translation and summarization.
- Transformers are a deep learning architecture introduced in the paper “**Attention Is All You Need**” (2017). They revolutionized **Natural Language Processing (NLP)** by replacing RNNs and LSTMs with a fully attention-based approach.
- Transformers are the foundation of modern NLP models like **BERT, GPT, T5, XLNet**,

### Summary:

Natural language processing (NLP) is a subfield of computer science and artificial intelligence (AI) that uses machine learning to enable computers to understand and communicate with human language.

*DL 22/11/2025*  
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