



**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

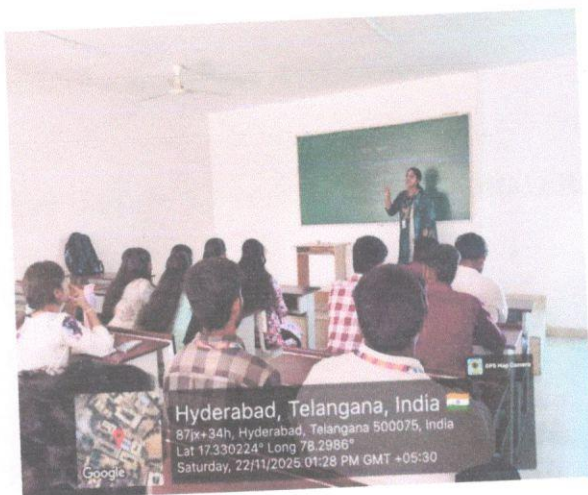
Objectives of the Course Module:

- 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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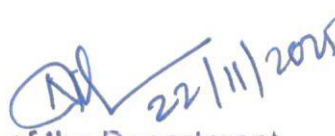
Expected Learning Outcomes of the Module:

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.


22/11/2025
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