PUNE INSTITUTE OF COMPUTER TECHNOLOGY,
DHANKAWADI, PUNE – 43.

UG SEMINAR ABSTRACT
Academic Year: 2021-22

DEPARTMENT: COMPUTER ENGINEERING

Seminar On : Optimizing Language Models by Mapping Elements of Human Cognition

By : Ved Ajit Patwardhan **Roll No.:** 31262

1. Name of the topic: Optimizing Language Models by Mapping Elements of Human Cognition
2. Topic-wise contents:
    1. Introduction
    2. Motivation and Objectives
    3. Architecture
    4. Methodology details
    5. Algorithm
    6. Implementation
    7. Conclusion
3. References:

    1. Emily M. Bender and Alexander Koller, "Climbing towards NLU: On Meaning, Form, and Understanding in the Age of Data"*Association for Computational Linguistics*[Online] available from doi: 10.18653/v1/2020.acl-main.463
    2. Musil, Tomáš. "Representations of Meaning in Neural Networks for NLP: a Thesis Proposal." *NAACL* (2021).
    3. Feldman and Jerome, "From Molecule to Metaphor: A Neural Theory of Language" *Cambridge, MA: The MIT Press (A Bradford book), 2006,* ISBN 0-262-06253-4.
    4. Mondal P. (2020) Biological Foundations of Linguistic Cognition. In: Language, Biology and Cognition. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-030-23715-8_2

Date: 11/09/2021

Student

REMARKS BY UG SEMINAR COORDINATOR

Date:

UG Seminar Coordinator

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Abstract: Recent language models like GPT3, BERT, XLNet, etc. have shown great performance over a wide range of Natural Language Processing tasks. But, multiple occurrences of study have shown that even though these models can learn aspects of linguistic formal structure (e.g. agreement, dependency structure), they do not extract meaning from the data. And, this is one of the reasons why these models are yet to achieve human-analogous language understanding. To bridge this gap, certain elements of human cognition involved in language understanding will be mapped to these language models followed by observing their performance on meaning-sensitive Natural Language Processing tasks. This model will provide a computationally cheaper alternative to perform various Natural Language Processing tasks as well as facilitate study in the direction of achieving the greater goal of General Linguistic Intelligence.

Keywords: GPT3, BERT, XLNet, Natural Language Processing, meaning-sensitive, human cognition, General Linguistic Intelligence

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REMARKS BY UG SEMINAR GUIDE:

Date:

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UG Seminar Guide

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