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Seminar Title	: Diagnosis of Major Depressive Disorder from Text
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Venue	: Convention Hall (CS-208), CSE Department
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Abstract	<p>: Major Depressive Disorder (MDD), commonly referred to as depression, is a mood disorder affecting millions of individuals globally. Depression can worsen over time, often leading to self-harm behaviours and, in severe cases, commits suicide. Factors such as stigma, limited access to resources, and delay in interventions increase the severity of the disease. Traditional diagnosis of MDD follows clinical evaluations, including direct interactions, relying on standardized diagnostic criteria and validated screening tools. The individuals suffering from mental disorders try to hide their identity in direct face-to-face interventions. With the increase in the innovation of medical technologies, there is a need to adopt mental assistance through computational intelligent systems that will oversee and control diagnosis processes. Text messages on social media platforms, interaction with conversational agents, and online forums are crucial in providing valuable insights into individuals' mental health status. Many individuals struggle to identify the presence of mental illness or negative emotions accurately from the text available on digital platforms to provide a better course of treatment before they reach a critical stage. The major challenging problem is a diagnosis of MDD from Text. The current work addresses the crucial need for innovative mental health assistance techniques. The primary objective of the work is to provide a prompt diagnosis of MDD from text to increase the lifetime of a depressed individual. This thesis presents various contributions introducing novel approaches by utilizing Natural Language Processing (NLP) techniques and Deep learning algorithms to accurately diagnose MDD for prompt intervention. The first contribution creates the "Fasttext Convolution Neural Network with Long Short-Term Memory (FCL) Model to detect depression and non-depression individuals from social media posts. The second contribution introduces the "BERT with Modified CNN (BMC)" model to provide smooth interaction through a novel intent classification technique in conversational agents. Then, it uses the Patient Health Questionnaire -9 (PHQ-9) to determine the severity of depression. The third contribution proposes a "Speech Enhancement-based Conversational Agent for Determining Depression Level (SECAD)" architecture to address the difficulties in verbal expression for improved speech-to-text conversion and then determine the depression levels through the features of the BMC model. The fourth contribution introduces a multi-class classification system, "Fusion of DistilBERT with Convolutional Neural Network (FDC)," to complete the diagnosis of depression following the standardized DSM-5 criteria for the symptoms categorization. The work uses standard benchmark datasets to implement the proposed techniques and baseline models. Precision, Recall, F1-score, Accuracy, and Word Error Rate (WER) are the metrics used to evaluate the performance of the models. Experimental results show the superior performance of the suggested techniques over the state-of-the-art models. The work provides a cost-effective and accessible solution for diagnosing MDD from text.</p>