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Notice for the PhD Viva Voce Examination

Ms Vandana, Registration Number: 2170237, PhD Scholar at the School of Sciences, CHRIST (Deemed to be University) will defend her PhD thesis at the public viva-voce examination on Monday, 09 March 2026 at 11.30 am in Discussion Room, Second floor, A Block, CHRIST (Deemed to be University), Delhi NCR Off-Campus, Ghaziabad - 201003, Uttar Pradesh, India.

- Title of the Thesis** : **Predictive Model for Psychological Health Issues Using AI Solutions: Aspects and Analysis**
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The members of the Research Advisory Committee of the Scholar, the faculty members of the Department and the School, interested experts and research scholars of all the branches of research are cordially invited to attend this open viva-voce examination.

Place: Bengaluru
Date: 18 February 2026

Registrar (Academics)

ABSTRACT

Millions of people across the globe are impacted by mental health disorders, yet traditional diagnostic and treatment approaches often face challenges related to subjectivity, accessibility, and early detection. The rising incidence of psychological illnesses, such as depression, anxiety, schizophrenia, bipolar disorder, and post-traumatic stress disorder (PTSD), which leads to suicide, demands the creation of novel strategies for early identification and intervention. Convolutional neural networks (CNNs) and recurrent neural networks (RNNs) enable real-time monitoring through wearable devices and natural language processing (NLP), enhancing predictive analytics for mental health crises. Additionally, AI-powered chatbots using transformer-based architectures provide on-demand support and cognitive behavioral therapy (CBT) interventions. Emphasizing the integration of computational methods with clinical psychology, this thesis investigates AI-based predictive modelling for predicting suicidal or non-suicidal conditions.

Through the proposal of fresh approaches for predictive modelling and therapeutic techniques, this study adds to the increasing corpus of knowledge in AI and mental health. It provides a thorough study of cutting-edge artificial intelligence methods together with their benefits, drawbacks, and future areas of research. This thesis is based on the suicide prediction that was led with any mental health disorder. It aims to advance mental health care by bridging the gap between artificial intelligence and psychology, creating a foundation for more effective, accessible, and personalized treatment. By integrating AI-driven technologies with psychological insights, this approach seeks to transform traditional methods into intelligent, data-informed solutions that enhance early detection, intervention, and overall mental well-being. The results underline the need for multidisciplinary cooperation among data scientists, psychologists, and healthcare legislators to guarantee ethical, efficient, and sustainable AI uses in mental health.

The study predicts the suicidal or non-suicidal behavior of a person by using the SAE O- O-BiLSTM (author's algorithm) and optimizing the result by using the Harris Hawk optimizer. The SAE-O-BiLSTM algorithm is developed by using a Sparse Autoencoder, LSTM, and BiLSTM. The purpose of Sparse AutoEncoder is to extract the features from the dataset. The features received here are sent to LSTM for further analysis. LSTM saves the feature in the memory and checks with the other data (testing data). If it matches it, send it to BiLSTM for a more optimized result. To make the result better Optimized Adaptive Harris Hawk optimizer is included to enhance the result of the algorithm. Analysis is done by calculating Accuracy, Precision, F1 Score, and Recall.

In all the parameters, SAE-O-BiLSTM gives the best result. Comparison has been done between deep learning, machine learning, and the author's algorithm. The result of the proposed algorithm is found to be the best. The challenges/limitation which has been faced by the researcher is the acquiring of dataset have mental health disorder. The dataset has very limited features. Future research should focus on refining deep learning models while maintaining ethical standards to maximize their impact in clinical and real-world applications.

Keywords: *Mental Health, Emotion, Adolescence, Sparse Autoencoder, Adaptive Harris Hawk Optimizer, Suicide, Deep Learning, SAE-O-BiLSTM, NLP, Machine Learning, Artificial Intelligence.*

Publications:

1. **Vandana**, S Srivastava, N Arora and V Gupta, "An Efficient Deep Learning Model Using Harris-Hawk Optimizer for Prognostication of Mental Health Disorder", DOI: 10.54392/irjmt2449, International Research Journal of Multidisciplinary Technovation, SCOPUS.
2. **Vandana**, S Srivastava and N Arora, "Aspect of Artificial Intelligence in Dealing with Mental Health Disorders in Adolescents", 12th International Conference on Soft Computing for Problem Solving (SocProS 2023), SCOPUS.
3. **Vandana**, S Srivastava and R Agarwal, "Performance Evaluation of SAE-O-BiLSTM for Predicting the Suicidal Behavior", 2024 4th International Conference on Advancement in Electronics & Communication Engineering (AECE), SCOPUS.