

Abstract

This research investigates the effectiveness of the robustly optimized RoBERTa architecture (IndoRoBERTa) for the nuanced task of functional emotion classification in virtual counseling for early marriage prevention. Building on previous work which confirmed the high viability of the IndoBERT model for this task (94% accuracy), this study explores whether more advanced, pre-trained architectures can offer superior performance. The study evaluates the IndoRoBERTa model on its ability to classify counselor responses into five specific categories: Enthusiasm, Gentleness, Analytical, Inspirational, and Cautionary. Using a two-phase training methodology on a synthetically generated dataset, the model achieved a competitive accuracy of 89%. Interestingly, this result, while strong, falls slightly below the established baseline, inviting a deeper analysis and highlighting that architectural complexity does not guarantee superior performance in highly specialized domains. The primary contribution of this work is not only the successful implementation of the IndoRoBERTa model but also the critical analysis of its performance relative to existing architectures, providing valuable insights for developing more emotionally intelligent and context-aware virtual agents.

Keywords: IndoRoBERTa, Emotion Classification, Virtual Counseling, Early Marriage, Facial Expression Mapping, Natural Language Processing (NLP)