The Potential of AI in Detecting Depression Using Social Media

Title: Leveraging Artificial Intelligence for Predicting Depression from Social Media: An Ethical Exploration

Abstract:
The utilization of AI techniques for predicting depression from social media holds significant promise in transforming the landscape of mental health diagnosis and treatment. With access to an extensive pool of data on social media platforms, AI technologies can offer invaluable insights into the mental health status of individuals, aiding mental health professionals in identifying those who may benefit from professional intervention. However, the ethical considerations surrounding the implementation of AI in healthcare and psychiatric diagnosis are paramount. The application of AI in psychiatric diagnosis demands careful deliberation, addressing concerns related to privacy and fairness to ensure the ethical and effective use of these technologies.

This research paper delves into the use of artificial intelligence (AI) techniques to predict depression from Twitter data through sentiment analysis. The study employs the Text Blob library and deploys several classification algorithms, including the Random Forest Classifier, KNN Classifier, Decision Tree, and Naïve Bayes, to analyse a labelled dataset comprising 20,000 English tweets sourced from the Twitter API. These tweets are categorized as either "depressed" or "non-depressed" based on the user who posted them.

The primary objective of this research is to assess the accuracy of AI techniques in predicting depression based on social media data and to investigate the ethical implications associated with their application in psychiatric diagnosis. The study's findings demonstrate that AI techniques, with a notable focus on the Decision Tree algorithm, followed closely by the Random Forest Classifier, exhibit a high level of accuracy in predicting depression from Twitter data. The application of AI techniques to identify depression from social media data holds immense promise, potentially lowering barriers to accessing mental health services. While ethical considerations are indeed pertinent, additional research is warranted to comprehensively explore their potential in identifying and treating mental health disorders