

ABSTRAK

Kesehatan mental adalah bagian penting dari kehidupan seseorang, khususnya remaja dan dewasa muda yang menghadapi berbagai tantangan dari dunia akademik, sosial, dan sosial mereka. Perkembangan teknologi, khususnya dalam bidang Pembelajaran Mesin, memungkinkan skrining awal kondisi psikologis yang lebih cepat dan objektif. Penelitian ini bertujuan untuk mengklasifikasikan kondisi psikologis individu menggunakan algoritma *Random Forest* berbasis *Web. Psychological Assessment Dataset*, yang diperoleh melalui *Kaggle*, terdiri dari 9.504 data. *Understanding Business, Data Understanding, Preparation, Modeling, Evaluation*, dan *Deployment* adalah semua komponen metodologi CRISP-DM yang digunakan dalam penelitian ini. Dalam klasifikasi target, sembilan kondisi psikologis yaitu *Cognitive Impairments, Coping and Resilience, Eating Disorders, General Mental Health, GAD, Mood Disorders, PTSD, Sleep Disorders*, dan *Stress-Related Conditions*. Untuk mengevaluasi model, *Confusion Matrix* digunakan dengan metrik *Accuracy, Precision, Recall*, dan *F1-Score*. Hasil penelitian menunjukkan bahwa algoritma *Random Forest* mampu mengklasifikasikan sembilan kondisi psikologis dengan skor *Accuracy Testing* yang sangat baik yaitu 88,11%, *Precision (Weighted)* 88,5% dan *Precision (macro)* 70,51%, *Recall (Weighted)* 88.11% dan *Recall (Macro)* 48,03%, serta *F1-Score (Weighted)* 86,26% dan *F1-Score (Macro)* 50,1%.

Kata kunci: Kesehatan Mental, Gangguan Psikologis, Random Forest, Klasifikasi Multi-Kelas, Sistem Berbasis Web.

ABSTRACT

Mental health is an important part of a person's life, particularly for teenagers and young adults who face various challenges in their academic, social and personal lives. Technological developments, particularly in the field of Machine Learning, enable faster and more objective initial screening of psychological conditions. This study aims to classify individuals' psychological conditions using a web-based Random Forest algorithm. The Psychological Assessment Dataset, obtained via Kaggle, comprises 9,504 data points. Understanding Business, Data Understanding, Preparation, Modelling, Evaluation, and Deployment are all components of the CRISP-DM methodology used in this study. The target classification comprises nine psychological conditions: Cognitive Impairments, Coping and Resilience, Eating Disorders, General Mental Health, GAD, Mood Disorders, Post-Traumatic Stress Disorder (PTSD), Sleep Disorders, and Stress-Related Conditions. To evaluate the model, a Confusion Matrix was used with the metrics Accuracy, Precision, Recall and F1-Score. The results of the study show that the Random Forest algorithm is capable of classifying the nine psychological conditions with excellent Testing Accuracy scores of 88.11%, Precision (Weighted) 88.5% and Precision (Macro) 70.51%, Recall (Weighted) of 88.11% and Recall (Macro) of 48.03%, as well as an F1-Score (Weighted) of 86.26% and an F1-Score (Macro) of 50.1%.

Keywords: *Mental Health, Psychological Disorders, Random Forest, Multi-Class Classification, Web-Based System.*