

ABSTRACT

In the early stages, Parkinson's disease is very difficult to diagnose. So we need a method that can diagnose Parkinson's disease early. Until now, there has not been one specific test to ascertain Parkinson's disease. The cause of this disease is damage to nerve cells called the substantia nigra which functions to produce a compound called dopamine. Parkinson's sufferers usually experience stiff muscles and have difficulty walking.

Therefore, this research was conducted by classifying the signal recordings produced by vertical ground reaction force (VGRF) sensors sourced from the Physiobank database. VGRF sensors have 16 sensors installed on the feet while walking. Android is only used for interfaces and processing done in Python. The method used is the Wavelet Packet Decomposition (WPD) and K-Nearest Neighbor (KNN) methods.

In this study 230 training data and 76 test data were used. Produces 80% accuracy within 38 minutes for Parkinson's classification and 87.14% within 46 minutes for age classification. It is hoped that this study can reduce the number of Parkinson's disease because by diagnosing symptoms that appear early, patients can do all forms of prevention to reduce the incidence of Parkinson's disease.

Keywords: Parkinson's disease, Wavelet packet decomposition, K-nearest neighbor, Vertical ground reaction force.