**Mobile IT diagnostics system for Parkinson's disease based on the patient's movement**

Our team at the Belarusian State University of Informatics and Radio electronics has developed an innovative approach to Parkinson's disease detection through the analysis of Freezing of Gait (FOG) sensor data. After training over 1000 epochs, our system has demonstrated exceptional performance with 96.3% accuracy, 96.05% precision, 96.5% sensitivity, and an average F1 score of 96.24% in distinguishing Parkinson's disease patients from control subjects.

Innovative Approach:

Our research at the Belarusian State University of Informatics and Radio electronics has led to the creation of a mobile IT diagnostic system specifically designed for Parkinson's disease, focusing on the analysis of Freezing of Gait (FOG) through Long Short-Term Memory (LSTM) neural networks. This system employs wearable sensors to capture acceleration data from different parts of the body, offering a novel approach to understanding and diagnosing Parkinson's disease through movement analysis.

Key Advantages:

Precision in Early Diagnosis: By analyzing FOG, a critical symptom of Parkinson's disease, our system enables the early detection of the condition, significantly before traditional symptoms become pronounced.

High Accuracy: The LSTM neural network model, after rigorous training and testing on the DAPHNet datasets, achieved an impressive accuracy of 96.3%.

Non-Invasive Monitoring: Our mobile IT diagnostic system offers a non-invasive, comfortable, and practical solution for continuous monitoring of patients, significantly improving the quality of life for individuals with Parkinson's disease.

Our Goal:

Our primary objective is to enhance the lives of those affected by Parkinson's disease through early and accurate diagnosis. By leveraging advanced machine learning algorithms and the latest in sensor technology, we aim to provide healthcare professionals with a powerful tool for the detection and monitoring of Parkinson's disease symptoms.

Meet Our Project Leader: Dr. Vishniakou Uladzimir Anatol'evich

Professor Vishniakou Uladzimir Anatol'evich, with a rich background in academic research including over 300 publications and 21 patents, significantly contributes to our Alzheimer's detection project with his deep expertise in information and communication technologies.

Join Us:

We cordially invite healthcare professionals, researchers, and individuals interested in Parkinson's diagnosis to join us in exploring and promoting the development of this technology.

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