**Mobile IT Diagnostics System for Alzheimer's by Patient's Voice**

Our research team at the Belarusian State University of Informatics and Radioelectronics has provided a new perspective on early diagnosis of Alzheimer's disease by utilizing existing machine learning technologies and voice transcription data. By analyzing voice data from patients and healthy individuals, our system has achieved a classification accuracy of 87.6%, demonstrating the effectiveness of our approach.

Innovative Approach:

Utilizing the Address 2020 Challenge dataset, we employed TfidfVectorizer for text feature extraction and a random forest classifier, optimized with GridSearchCV. Our method, integral to an IoT network based on the Flask framework and EMQX broker, facilitates seamless data gathering and analysis through HTTP requests for data upload and employs the MQTT protocol for feedback on predictive results. This network structure enables real-time monitoring and analysis, enhancing diagnostic capabilities and patient care, thereby achieving intelligent diagnostics for Alzheimer's disease.

Key Advantages:

- Non-invasive detection: Diagnosis can be made simply by analyzing the patient's voice, eliminating the need for complex medical examinations.

- Efficient identification: Accurate and rapid differentiation between healthy individuals and Alzheimer's patients, providing timely medical advice.

- Scientific foundation: This project is based on research work and demonstrates the potential application of machine learning in the medical field through meticulous data analysis.

Our Goal:

Our goal is not only technological innovation but, more importantly, to help those in need through this technology. We believe that even small steps forward can bring significant value to the early diagnosis and treatment of Alzheimer's disease.

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 Alzheimer's diagnosis to join us in exploring and promoting the development of this technology.

Contact Information:

- Email: vish@bsuir.by

- Phone: +375 44 486-71-82