Title (en)

SOFTWARE-BASED, SPEECH-OPERATED AND OBJECTIVE DIAGNOSTIC TOOL FOR USE IN DIAGNOSING A CHRONIC NEUROLOGICAL DISORDER

Title (de)

SOFTWAREBASIERTES, SPRACHBETRIEBENES UND OBJEKTIVES DIAGNOSEWERKZEUG ZUR VERWENDUNG IN DER DIAGNOSE EINER CHRONISCHEN NEUROLOGISCHEN STÖRUNG

Title (fr)

OUTIL DE DIAGNOSTIC OBJECTIF FONDÉ SUR UN LOGICIEL, À COMMANDE VOCALE À UTILISER DANS LE DIAGNOSTIC D'UN TROUBLE NEUROLOGIQUE CHRONIQUE

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Application

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Abstract (en)

[origin: WO2022253742A1] The invention relates to a software-based diagnostic tool, a method for operating same, and a diagnostic system for use in diagnosing a chronic neurological disorder such as autism in both children and adults. The diagnostic tool comprises a speech analysis module (21) for identifying characteristic values (28) of a vocal biomarker in a speech signal (26) of a subject (11), at least one further module (22, 23) for identifying characteristic values (30, 32) of a second biomarker, and an evaluation unit (25) connected downstream thereof. The speech analysis module (21) comprises: a speech-signal-triggering controller (21a) which displays image data on an image display device (7) in order to trigger at least one speech signal (26) in the subject (11); a speech recording unit (21b) which records the speech signal (26); and a speech signal analyzer (21c) which subsequently evaluates the speech signal (26) to determine first at what point in time which pitch level is present, and subsequently determines a frequency distribution of the pitch levels among a number of frequency bands of a selected frequency spectrum, with this frequency distribution forming the characteristic values (28) of the vocal biomarker. On the basis of the characteristic values (28, 30, 32) of the biomarkers, the evaluation unit (25) determines, by applying a machine learning algorithm and comparison with a multi-dimensional interface, whether the subject (11) has the chronic neurological disorder.

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