The ADReSS challenge at INTERSPEECH 2020 was proposed to incentivise researchers to focus on automated recognition of Alzheimer Disease, given the quick rise of Artificial Intelligence (AI) technologies and the (still) poor application of it in the field of AD recognition, with the aim of providing standardization on the topic of AD’s classification through speech recognition; the challenge’s is well described in [2].

ADReSS provides researchers with a benchmark speech dataset which has been acoustically pre-processed and balanced in terms of age and gender; two cognitive tasks are defined to be executed: Alzheimer’s speech classification task, in which participants create models for classifying speech as dementia or healthy speech, and e neuropsychological score regression task, where models must predict mini-mental state examination scores (MMSE).

The ADReSS dataset consists of speech recordings and transcripts of spoken picture descriptions elicited from participants through the Cookie Theft picture from the Boston Diagnostic Aphasia Exam, from which acoustic features were extracted using the openSMILE v2.1 toolkit; in total 88 eGeMAPS, 988 emobase, 6,373 ComParE, 6,912 MRCG, and 13 minimal features were extracted from 4,077 speech segments.

The AD classification and the MMSE prediction task can be carried out using different models, in [2] linear discriminant analysis (LDA), decision trees (DT), nearest neighbour (1NN), random forests (RF) and support vector machines (SVM) were used for the first while the latter performed baseline regression using five different methods, namely decision trees (DT), linear regression (LR), gaussian process regression (GPR), leastsquares boosting (LSBoost) and support vector machines (SVM).

These machine learning methods operating on automatically extracted voice features provided a baseline accuracy of up to 62.5% on the AD classification task, resulting in percentages well above the chance level (50%). A baseline RMSE of 6.14 and 5.21 for acoustic and linguistic features respectively on test has been established for the MMSE regression task, leaving hope for a clinical applicability and future research directions.