Alzheimer's Disease Detection Using Comprehensive Analysis of Timed Up and Go Test via Kinect V.2 Camera and Machine Learning

METHOD:

1.Timed Up and Go Test
2.Machine Learning(SVM)

DATA:

A total of 42 AD and 50 HC subjects were recruited in this study. The AD subjects were recruited from the patients of Iran Dementia and Alzheimer's Association (IDAA) who under-went comprehensive diagnostic processes and assessments of psychological tests, MRI, and EEG.

COMPONENT:

1.Kinect V.2 Camera

"**The Kinect v2 face recognition, motion tracking, and resolution are much more precise than the Kinect v1**. Kinect v2 uses "time of flight" technology to determine the features and motion of certain objects.

MAJOR FINDINGS:

The model classified the two groups(AD vs HC-Healthy Control) with an average accuracy of 97.75% and an F-score of 97.67% for five-fold cross-validation and 98.68% and 98.67% for leave-one-subject out cross-validation.

FUTURE WORK:

Future work extends this method to a larger cohort which includes individuals with MCI(Mild cognitive impairment) and other related disorders.