Supplementary Material

NeuroToolKit Data Hackathon: advancing data collaboration in Alzheimer's disease

Supplementary Video 1. Patient Value and Clinical Impact winning video (Team Wicking; Australia).

The video submitted by Team Wicking (Australia) who won the Patient Value and Clinical Impact category. Team Wicking used the NTKApp, AD Workbench, and EPAD dataset to identify modifiable risk factors associated with ATN biomarkers. They found TBI, obesity, and smoking were significantly associated with phosphorylated-tau; TBI, obesity, smoking, depression, and physical inactivity were significantly associated with neurodegeneration.

AD: Alzheimer's disease, ATN: Amyloid, tau, neurodegeneration, EPAD: European Prevention of Alzheimer's Dementia, NTKApp: NeuroToolKit application, TBI: Traumatic brain injury.



Supplementary Video 2. Technical Contribution winning video (Team MD Eagles; USA).

The video submitted by Team MD Eagles (USA) who won the Technical category. Team MD Eagles used the NTKApp, AD Workbench, and EPAD dataset to identify high-risk participants associated with the ATN biomarkers using a model-based clustering algorithm to capture the underlying structure of the data. Once high-risk individuals are identified, interventions could be provided to prevent or delay progression of AD.

AD: Alzheimer's disease, ATN: Amyloid, tau, neurodegeneration, EPAD: European Prevention of Alzheimer's Dementia, NTKApp: NeuroToolKit application.

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Task 1 Explore how the ATN others are associated with high call profiles		Tesk 2 constantor: Patient Value and Clinical Impact, Scientific Contribution, Intervation					
		 Technical Inestitucit 					
Btep 1. Select variables of interest to conduct latent class analysis							
Table 1-1. Bicanable test between AIN classification and selected cognitive, functional	- C	Data					
Brop 2. Conduct the latent class analysis to identify the closer groups	8						
The latert Markov models were filled on veload categorical and continuous variables		EPAD data used Training dataset Testing dataset	Task 1	Tank 2	+		
The final selection of versities and number of clusters even determined by RC and BI			Visit 1 only Combined with testing data Combined with training data	visit if only			
There were 6 variables included in the trial model, including two cognitive (MitDE) and				View used to lost the outpits			
Step 3. Examine the sample characteristics by cluster groups				Yes, used to test the performance of new cutoffs			
Table 1-2. Obtoinution of sociodemographic characteristics by cluster groups							
Figure 1-1. Latert Class Analysis pict (Physical Research and anti-report hearth and a the		Missing data imputation by the mice	Yes	No			
Table 1.3. Biostation and Ladenness 17% classification and chaine anomal							
Constitutions for Seal 1							
		Exclusion criteria	demented pathopents	demented participants			
Task 2 : Evaluate the offerent tournater definitions of A and T		•					
Eten 1. Franking the distributions of constitut function tests		Missing data imputation					-
Five cognitive tests were used in the principal component analysis according to		Figure. Correlation heatmaps of selected var	lables before and after imputation			terms analyzed places in the party of the set of the se	root. Buy during that
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Supplementary Video 3. Accessing the NTKApp.

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A step-by-step tutorial on how to access the NTKApp on the AD Workbench.

AD: Alzheimer's disease, NTKApp: NeuroToolKit application.



Great Images 🔢 🛔

Supplementary Video 4. Using the NTKCuration app.

A step-by-step tutorial on how to use the NTKCuration tool, curate a dataset using standard and custom dictionaries, and prepare it for analysis.



Supplementary Video 5. Using the NTKAnalysis app.

A tutorial how to use the NTKAnalysis tool and save a report in one interactive, publication-ready document. The NTKAnalysis tool bridges together R, RShiny, Python, and RMarkdown to create and execute statistical analyses.

The NTK Analysis App allows users to select a suite of powerful statistics to gain immediate insight into data. Outputs are available in publication-quality tables and interpretable graphical visualizations, which can be saved locally.



Supplementary Video 6. Using the NTKMeta-Analysis app.

A tutorial on how to use the NTKMeta-Analysis tool and compile multiple results into one interactive document. The NTKMeta-Analysis tool allows comparison of results generated by the NTKAnalysis tool across multiple studies or partners and produces aggregate point estimates.

Welcome to the NTKMeta-Analysis App tutorial. Here, you can import multiple analysis results, perform meta-analyses and save them as a publishing-ready interactive document. Let's dive in!

