* **EEG Database**

The dataset consisted of resting-state, eyes-closed EEG recordings from 88 subjects in a dementia research database. For this study, EEG signals from 29 cognitively normal (CN) subjects were selected, focusing on the F7–F8 electrode pair for NLID computation. All EEG data underwent preprocessing: a 0.5–45 Hz Butterworth band-pass filter was applied to remove low-frequency drift and high-frequency noise, and re-referencing was performed using the average of A1 and A2 mastoid electrodes. Artifact Subspace Reconstruction (ASR) was then used to remove high-amplitude noise (threshold = 17, 0.5 s window), followed by Independent Component Analysis (ICA) to eliminate non-neural components related to eye movements and muscle artifacts

Miltiadous, A., Tzimourta, K. D., Afrantou, T., Ioannidis, P., Grigoriadis, N., Tsalikakis, D. G., Angelidis, P., Tsipouras, M. G., Glavas, E., Giannakeas, N., & Tzallas, A. T. (2023). A Dataset of Scalp EEG Recordings of Alzheimer’s Disease, Frontotemporal Dementia and Healthy Subjects from Routine EEG. Data, 8(6), 95. <https://doi.org/10.3390/data8060095>

* **12-Lead ECG Database**

In this study, we selected 1,826 signals with normal sinus rhythm (SR) from the database. A Butterworth low-pass filter was first applied to remove frequency components above 50 Hz. Baseline drift was corrected using LOESS smoothing, and residual noise was further reduced with the Non-Local Means (NLM) technique. After preprocessing, NLID was computed between leads II and V1 to examine its trend

Zheng, Jianwei; Rakovski, Cyril; Danioko, Sidy; Zhang, Jianming; Yao, Hai; Hangyuan, Guo (2019). A 12-lead electrocardiogram database for arrhythmia research covering more than 10,000 patients. figshare. Collection. <https://doi.org/10.6084/m9.figshare.c.4560497>

* **ECG and Respiratory Database**

The database used in this study included 16 male subjects, with each recording containing electrocardiogram (ECG), invasive arterial blood pressure (via radial artery catheter), electroencephalogram (EEG), and respiration signals (mostly from nasal thermistors). Six- and seven-channel recordings also included respiratory effort signals from inductance plethysmography, while some recordings contained electrooculogram (EOG) and chin electromyogram (EMG) signals. For this study, we primarily selected ECG and respiratory signals to compute NLID and examine its nonlinear interaction trends [14].

Ichimaru Y, Moody GB. Development of the polysomnographic database on CD-ROM. Psychiatry and Clinical Neurosciences 53:175-177 (April 1999).

* **Eye Tracker Database**

This study recruited 50 participants, all students at National Kaohsiung University of Science and Technology. All participants signed informed consent forms before the experiment and confirmed normal vision and the absence of ocular or neurological disorders. Before the experiment, participants rested quietly in the laboratory for 10 minutes to achieve a stable baseline state. Afterward, after a fatigue intervention, they underwent an eye-tracking measurement to compare their focused and divergent gaze performance. The experimental procedures were reviewed and approved by the Institutional Review Board (IRB) under approval number CRREC-112-006.