Dear Fellow ECoG Researcher,

These are joystick-tracking data recorded at Harborview Hospital, in Seattle, WA. The data were originally described in the 2007 *Journal of Neural Engineering* manuscript titled "**Decoding two-dimensional movement trajectories using electrocorticographic signals in humans.**"

Schalk, G., J. Kubanek, K. J. Miller, N. R. Anderson, E. C. Leuthardt, J. G. Ojemann, D. Limbrick, D. Moran, L. A. Gerhardt, and J. R. Wolpaw. "Decoding two-dimensional movement trajectories using electrocorticographic signals in humans." Journal of neural engineering 4, no. 3 (2007): 264.

Please keep in mind that these anonymized data are from real patients who donated time in a difficult period of their lives to advance our understanding of the brain. Any publication involving these data **MUST** include the following in the methods section of the manuscript, without modification:

**Ethics statement:** All patients participated in a purely voluntary manner, after providing informed written consent, under experimental protocols approved by the Institutional Review Board of the University of Washington (#12193). All patient data was anonymized according to IRB protocol, in accordance with HIPAA mandate. It was made available through the library described in “A Library of Human Electrocorticographic Data and Analyses” by Kai Miller [Reference], freely available at<https://searchworks.stanford.edu/view/zk881ps0522>

During the study, each patient was in a semi-recumbent position in a hospital bed about 1 m from a computer monitor. The patient used a joystick to maneuver a white cursor track a green target moving counter-clockwise in a circle of diameter 85% of monitor height ~1m away. The hand used to control the joystick was contralateral to the implanted electrode array.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Subject** | | **Age** | **Sex** | **Hand** | **Grid Location** | **Seizure Focus** |
| FP |  | 23 | M | R | L Frontotemporal | L Temporal |
| GF |  |  |  |  |  |  |
| RH |  | 38 | M | R | R Frontal | R Frontal |
| RR |  |  |  |  |  |  |

Each datafile has 7 variables:

* "subject": This is the 2-letter patient code
* "data" (time x number of channels): These are the data. Sampled at 1000Hz, with a built-in bandpass 0.15-200 Hz: 1 pole band pass, so there is no sharp corner at 200Hz. The amplitude roll-off function is in the file “ns\_1k\_1\_300\_filt.mat”
* “TargetPosX” (time x 1): x-axis position of target
* “TargetPosY” (time x 1): y-axis position of target
* “CursorPosX” (time x 1): x-axis position of joystick-controlled cursor
* “CursorPosY” (time x 1): y-axis position of joystick-controlled cursor
* "electrodes" (number of channels x 3): Electrode locations, in Taliarach coordinates, for plotting on the standardized brain. These were obtained using the LOC package, and can be plotted with it as well (code in “loc” folder). From “*Cortical electrode localization from X-rays and simple mapping for electrocorticographic research: The “Location on Cortex” (LOC) package for MATLAB*” in J Neurosci Meth, 2007.

Note: GF has some clipping of cursor position from when it reached the edge of the display.

Best Wishes!

Kai Miller, Stanford University, 2015 (revised 2018)

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