

EEGManySteps: Investigating the Influence of Experimental Setups on Gait-Related EEG through Collaborative Data Collection and Analysis

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How much do hardware and software setups shape study outcomes? Inspired by *EEGManyLabs*^[1] & *EEGManyPipelines*^[2], we aim to enhance the reproducibility of mobile EEG by analyzing walking-EEG data collected across diverse setups worldwide.

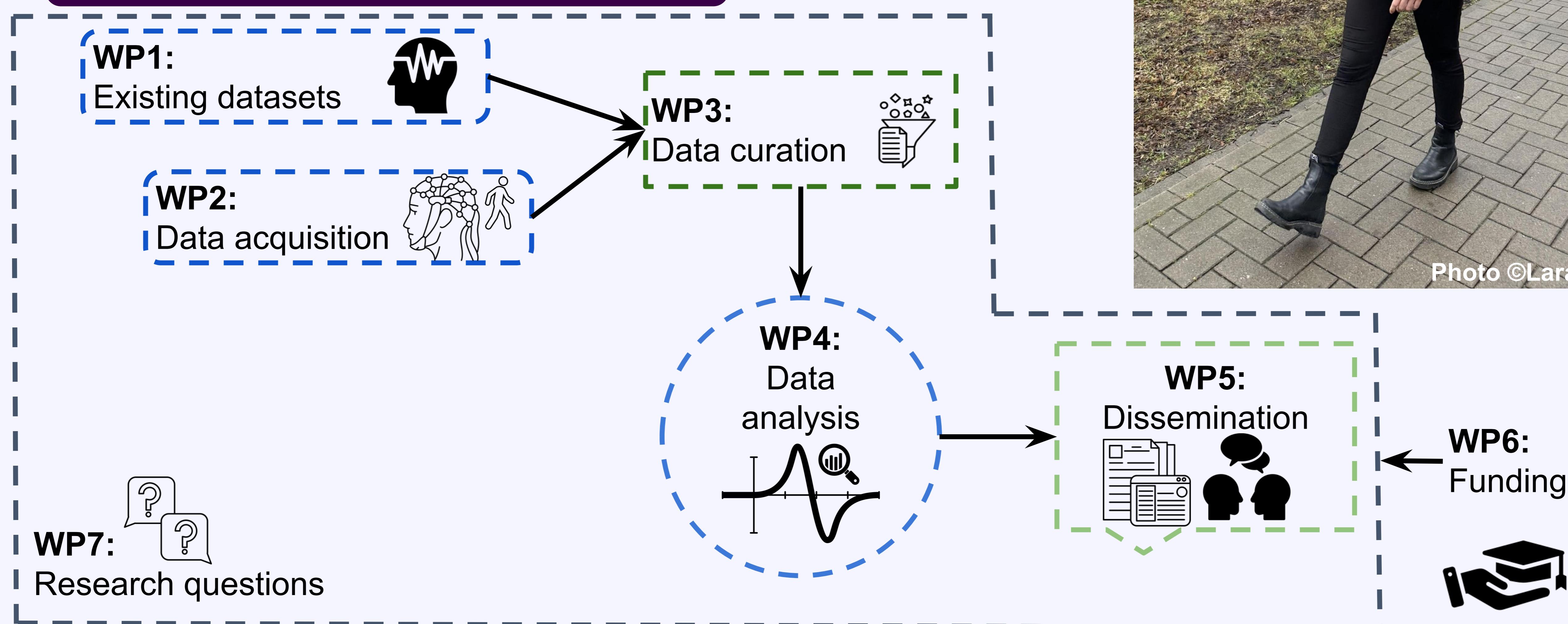
Goals

1. Step-specific time-frequency patterns.
2. Characterization of gait artifacts across different systems.
3. Influence of preprocessing on EEG results during walking.
4. Gait-related modulation of secondary task correlates.

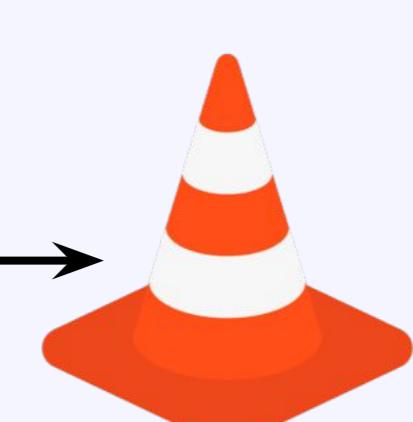
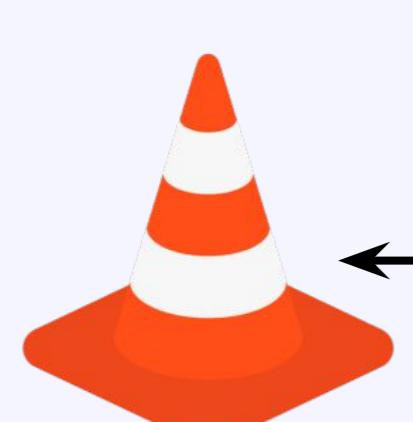


Photo ©Lara Papin

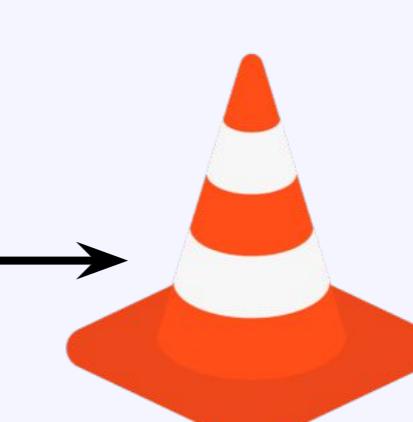
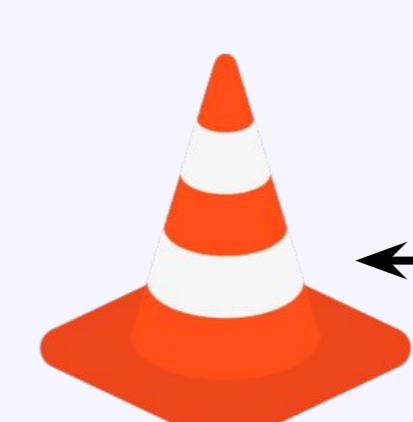
Project structure



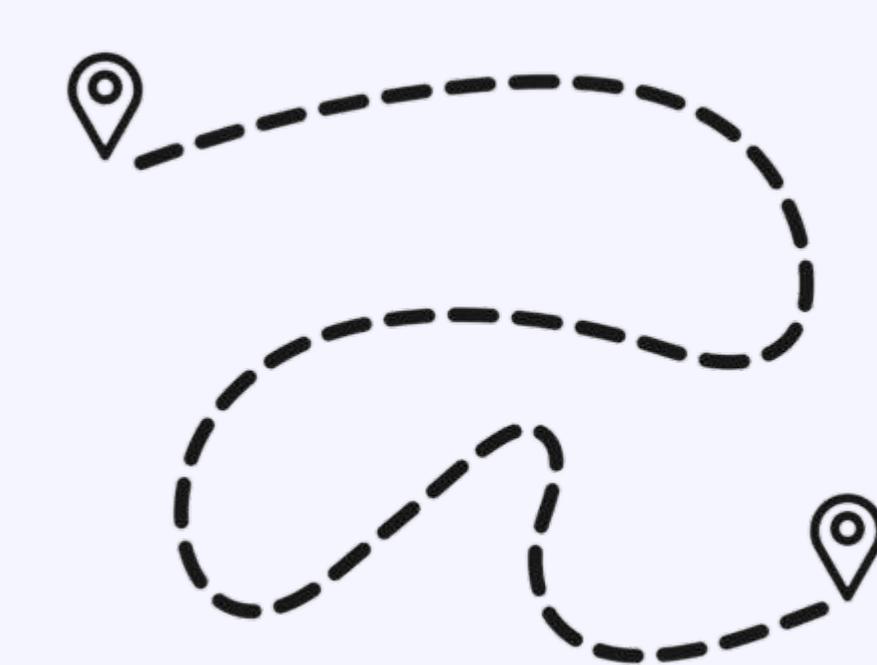
Submission types



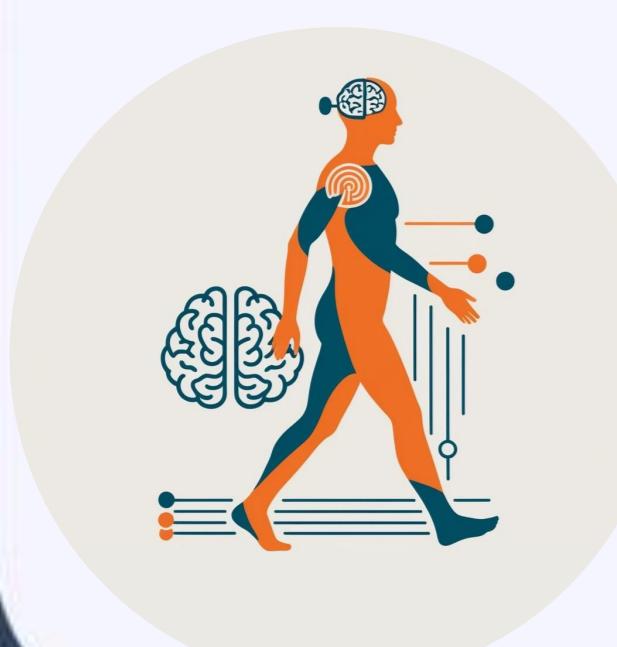
A. Oddball and Line Walking



B. Line Walking



C. Free Walking



Join us!

References

^[1]Pavlov, Y. G., Adamian, N., Appelhoff, S., Arvaneh, M., Benwell, C. S., Beste, C., ... & Mushtaq, F. (2021). # EEGManyLabs: Investigating the replicability of influential EEG experiments. *cortex*, 144, 213-229.

^[2]Trübutschek, D., Yang, Y. F., Gianelli, C., Cesnaite, E., Fischer, N. L., Vinding, M. C., ... & Nilsonne, G. (2024). EEGManyPipelines: a large-scale, grassroots multi-analyst study of electroencephalography analysis practices in the wild. *Journal of Cognitive Neuroscience*, 36(2), 217-224.



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