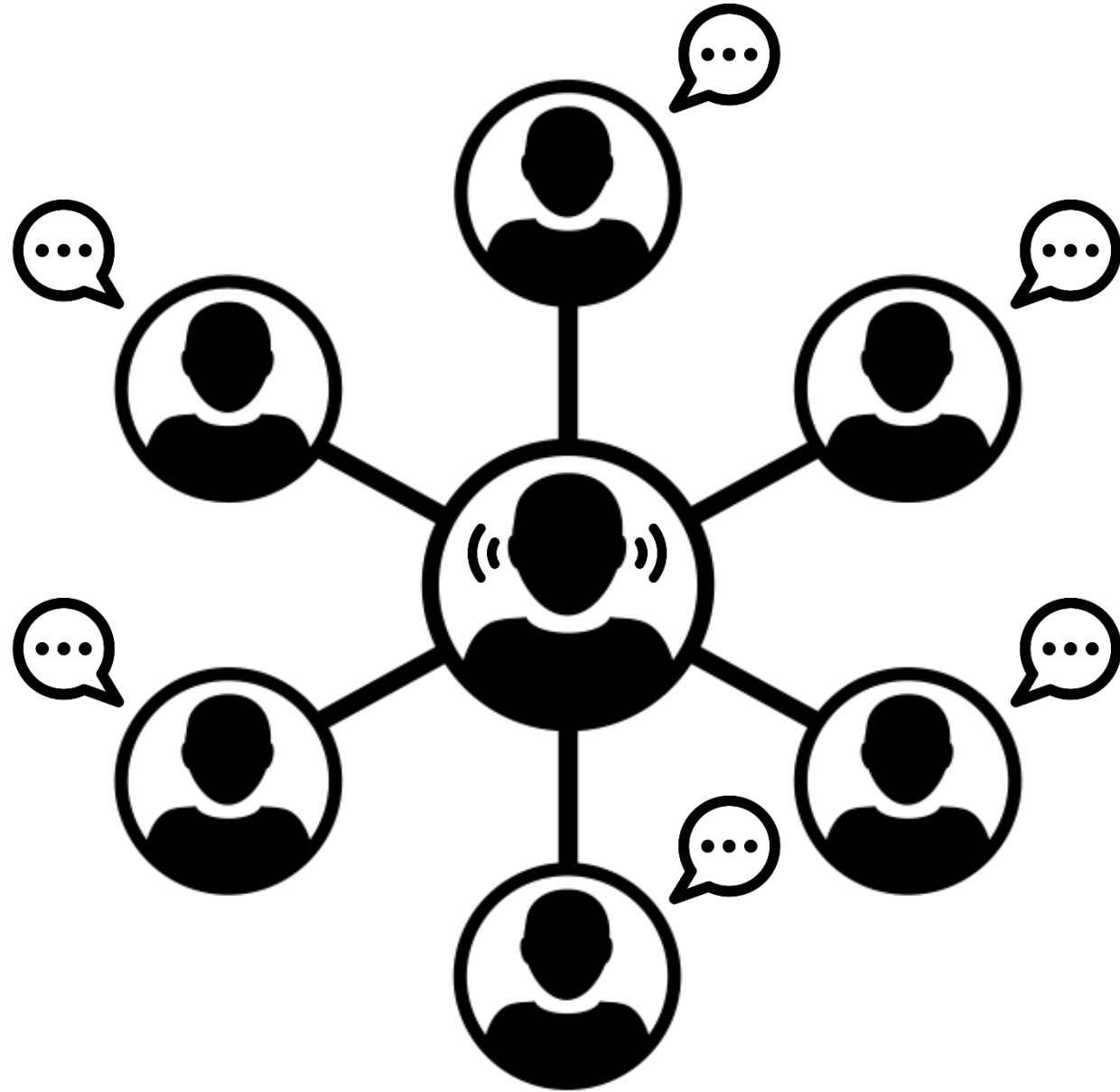


Riemannian Geometry-Based Decoding of the Directional Focus of Auditory Attention Using EEG

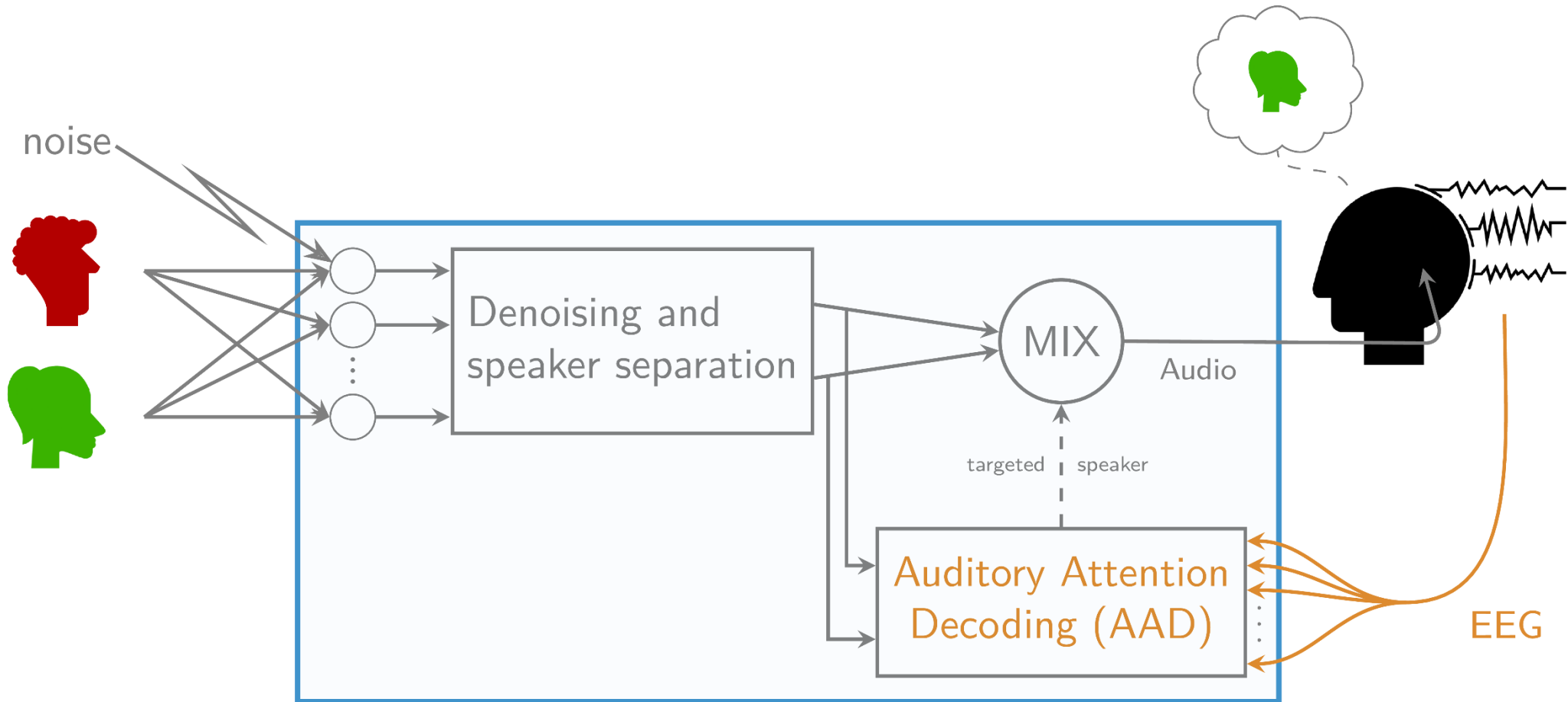
IEEE ICASSP 2021

Simon Geirnaert

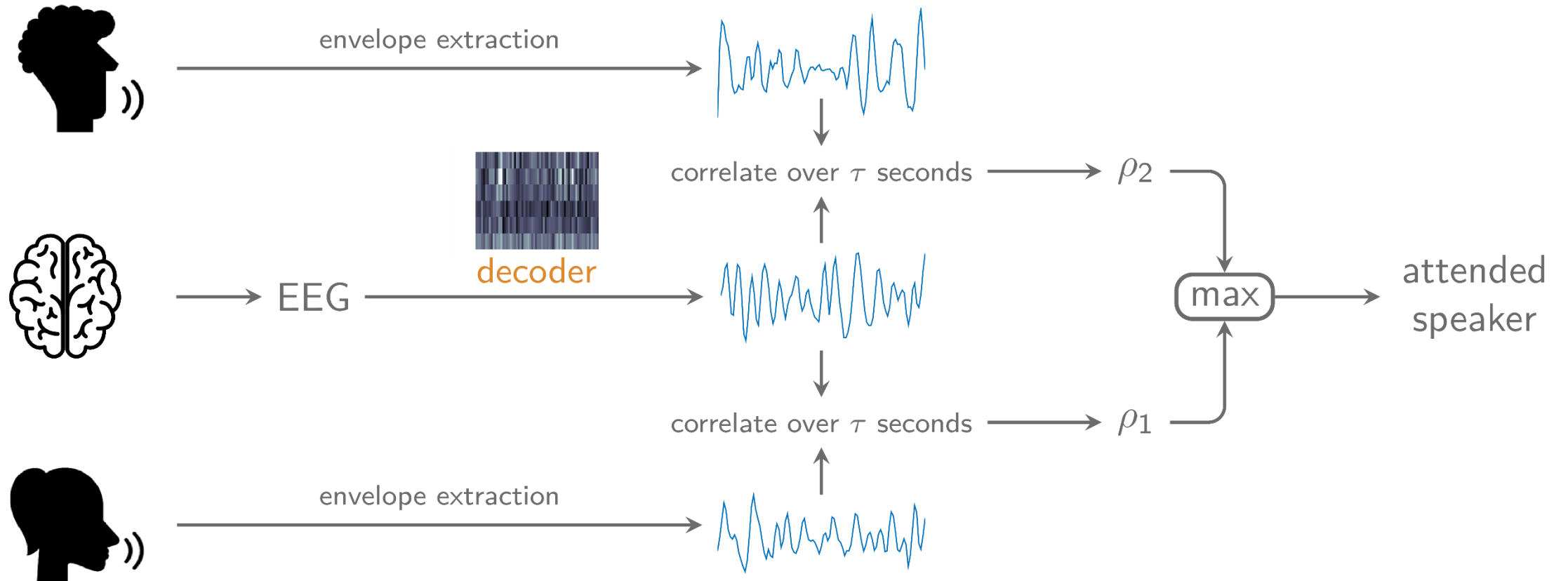
Joint work with Tom Francart and Alexander Bertrand



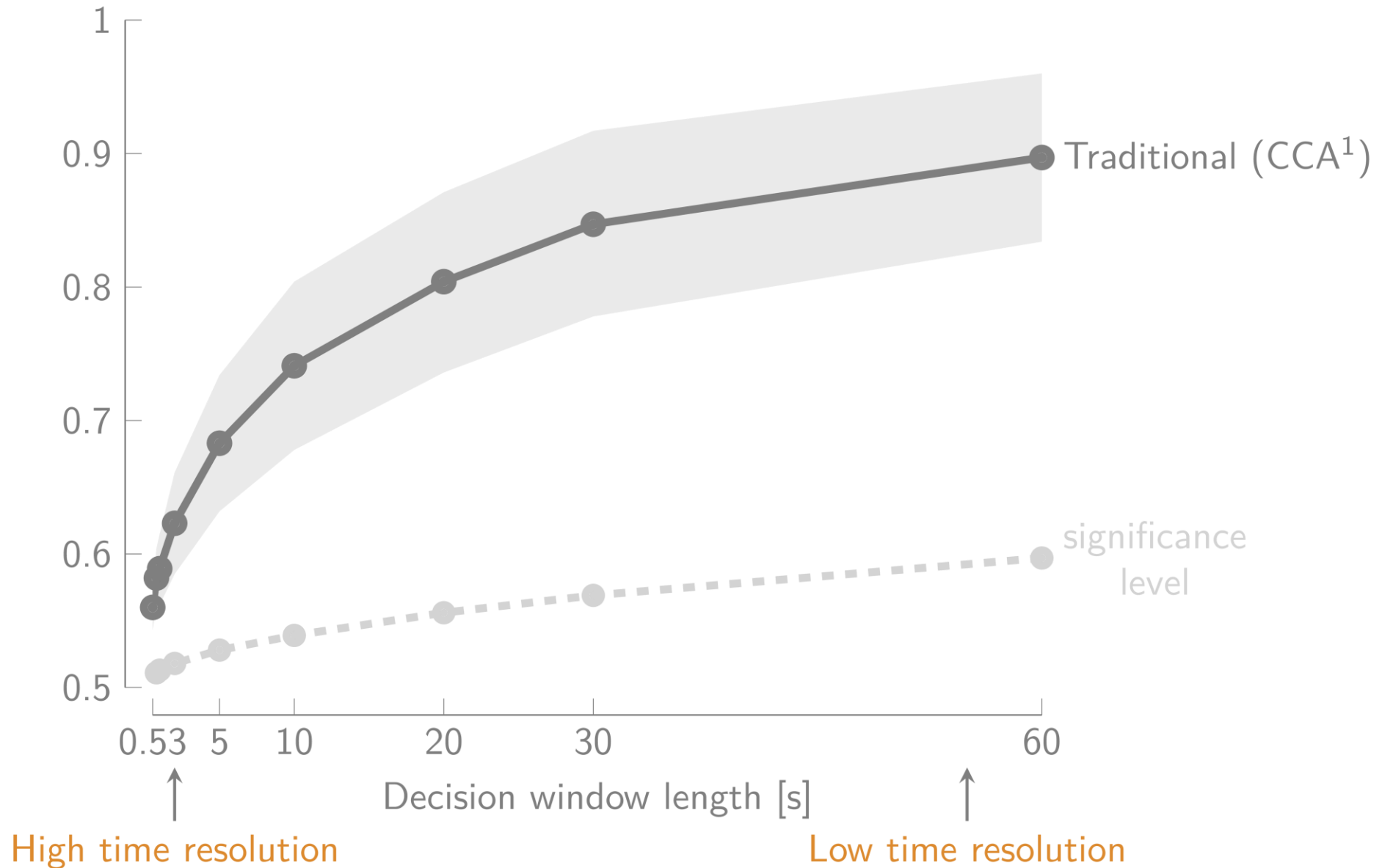
Smart neuro-steered hearing devices



The traditional approach: stimulus reconstruction



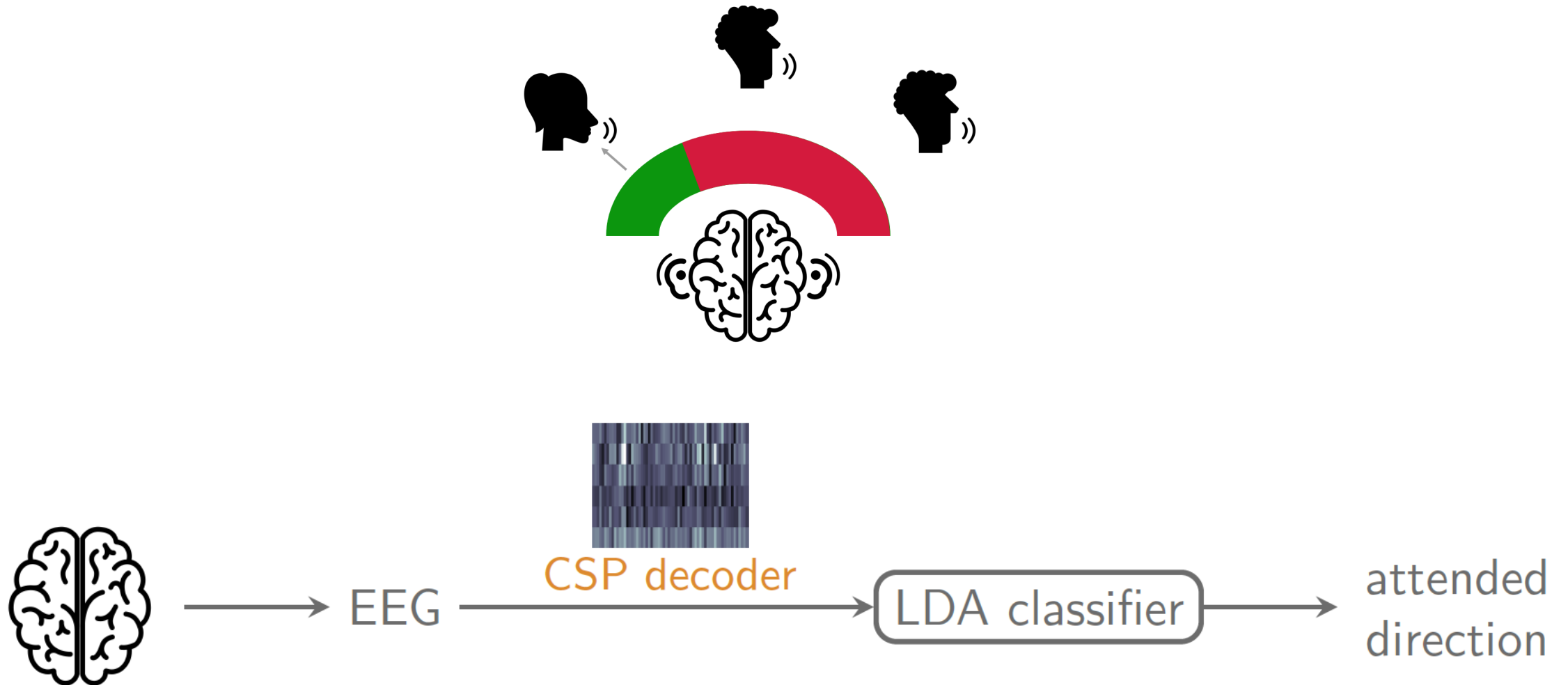
AAD accuracy



Decoding the **spatial focus** of auditory attention

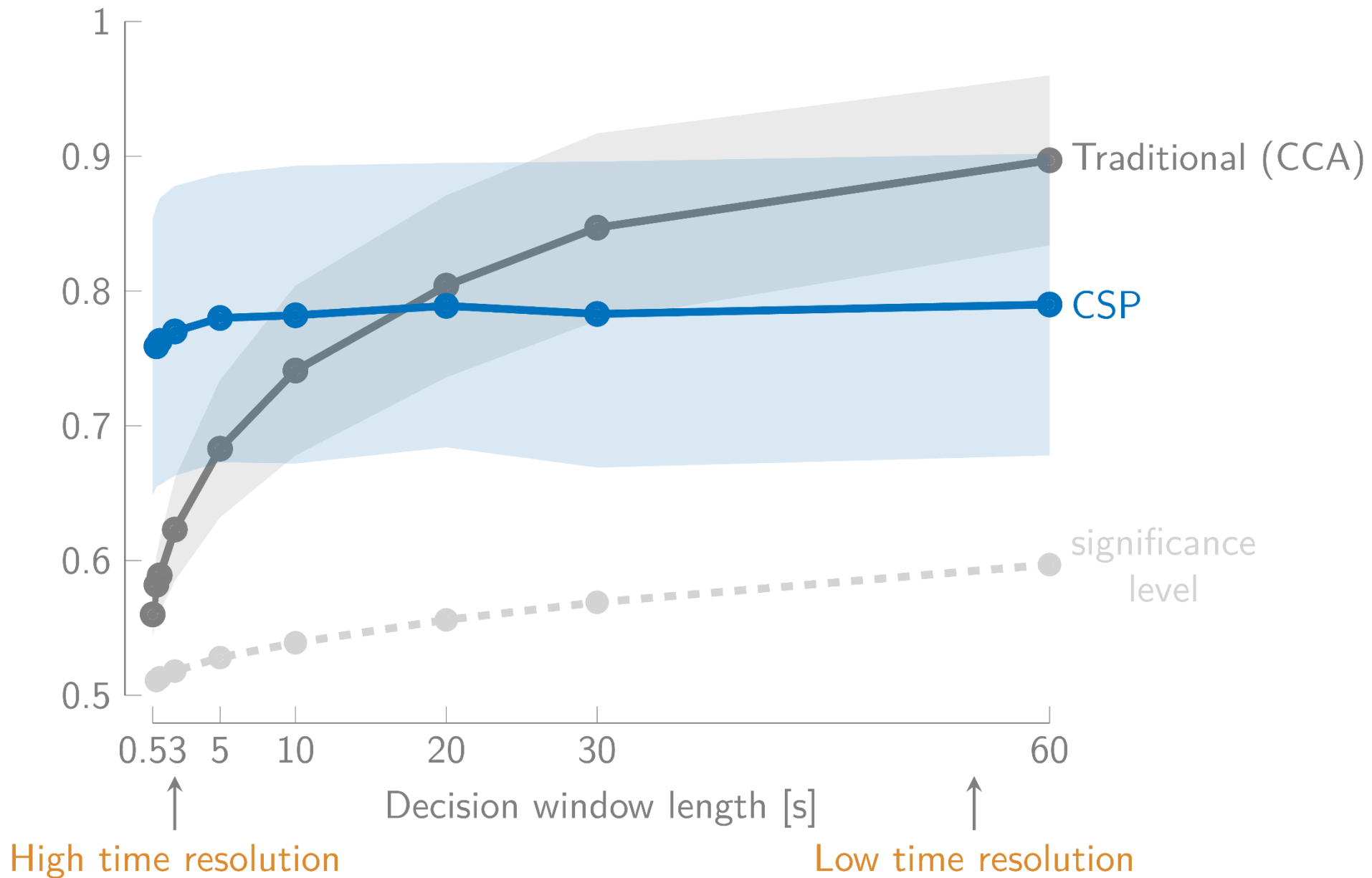


Decoding the spatial focus of auditory attention using common spatial pattern (CSP) filtering¹

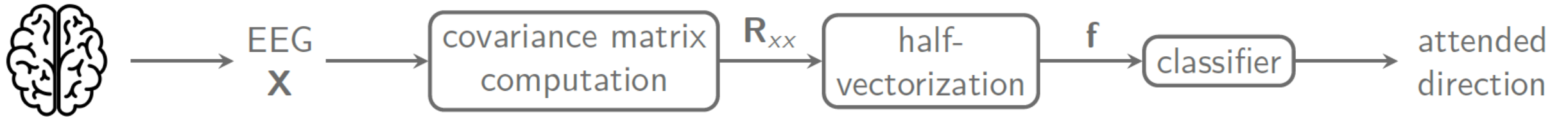


¹S. Geirnaert, T. Francart, and A. Bertrand, "Fast EEG-based decoding of the directional focus of auditory attention using common spatial patterns," *IEEE Transactions on Biomedical Engineering*, 2020

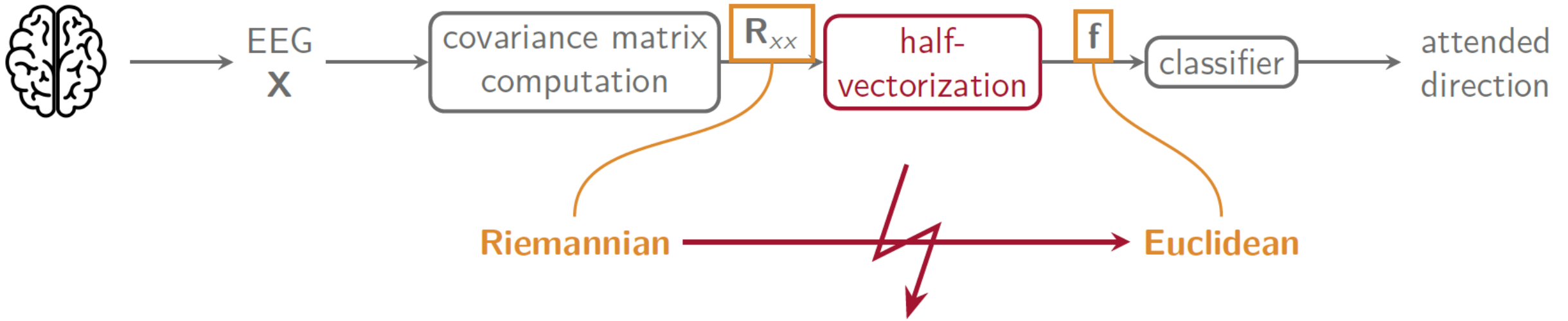
AAD accuracy



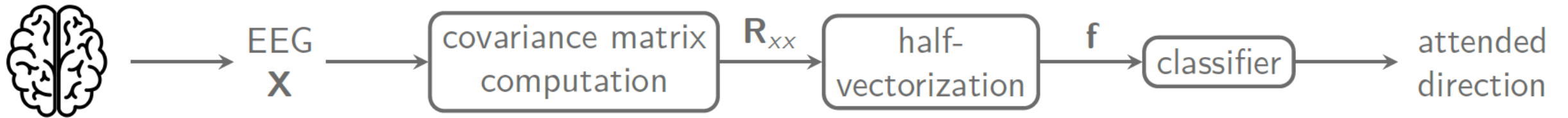
CSP ~ direct classification of covariance matrices



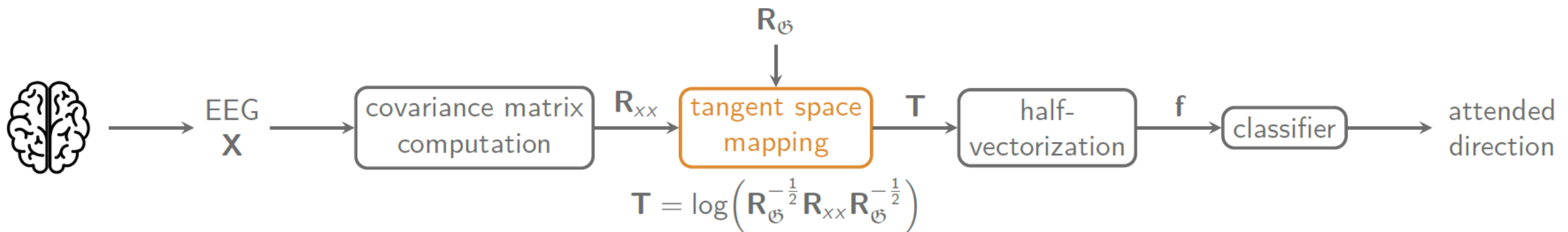
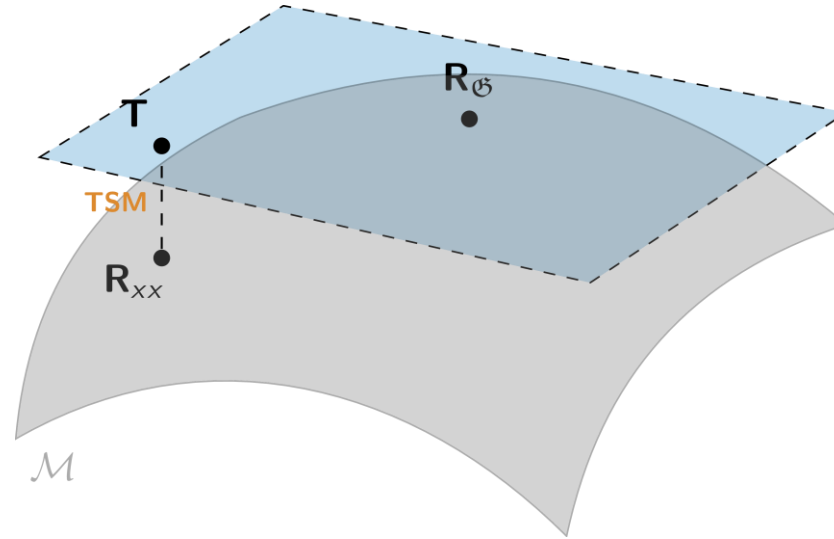
CSP ~ direct classification of covariance matrices



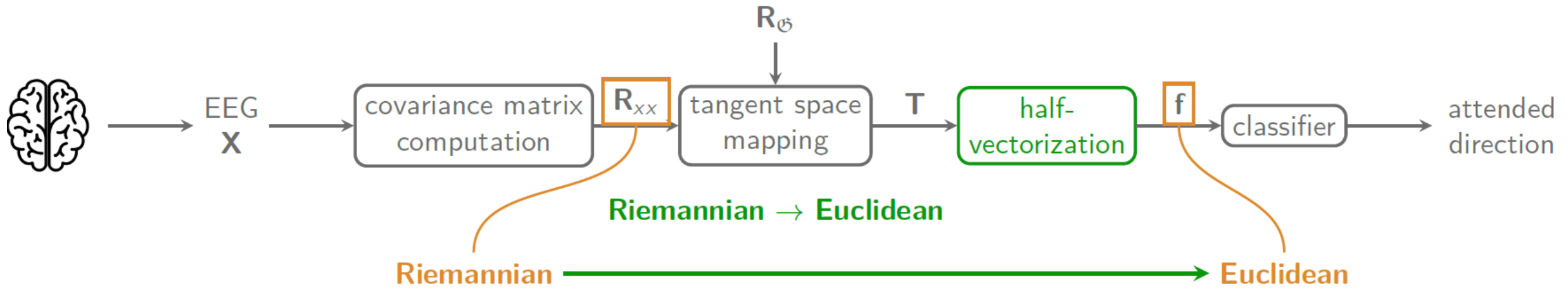
Direct classification of covariance matrices



Direct classification of covariance matrices



Direct classification of covariance matrices



AAD accuracy

