12. 개별연구 일일 탐구일지

작성일	3주차	2020.07.28.	작성자	이혜민
일일 목표	☑ Segmentation : data processing 완료하기			

- 원래 내일 마무리하려 했지만, 오늘 분량이 빨리 끝나는 바람에 segmentation까지 완료함
- 하지만 debugging이 필요해 보이기에 이때까지 한 코딩이 모두 제대로 작동하는지 디버깅을 완료하는 것을 내일까지의 목표로 삼자.
- Baseline normalization 전까지 디버깅 완료.

13. 개별연구 일일 탐구일지

작성일	3주차	2020.07.31.	작성자	이혜민
일일 목표	☑ 현재까지의 코드 디버깅 완료하기			

- 사수님께 질문 : “apply a spatial order 3 1-dimensional median filter on the vector”라고 했는데, 전체 array를 median filter에 적용시키면 가장자리에 있는 모든 gesture와 try들의 값이 0이 됩니다. 그러면 각 gesture의 한 try의 channel 별로 median filter를 적용해야 되는 것 아닌가요?

14. 개별연구 일일 탐구일지

작성일	3주차	2020.08.01.	작성자	이혜민
일일 목표	☑ Segmentation 완료 ☐ Feature extraction 완료			

- 사수님께 질문 : Feature extraction에 적혀있는 앞 두 문장을 내가 잘 해석한 것이라면 segmentation에서 이미 한 활동인데 그게 맞는건가요? 그러면 normalization만 하면 끝인건가요?

Feature Extraction The found segment is partitioned in N windows of equal length. We compute the RMS as feature for each channel on all windows and normalize the mean RMS over all channels. This results in a 168 dimensional feature vector per window. We concatenate the obtained RMS vectors resulting in a 168·N dimensional feature vector. Since the RMS is length normalized, it is irrelevant if the found activity segments do not have the same length.

15. 개별연구 일일 탐구일지

작성일	3주차	2020.08.02.	작성자	이혜민
일일 목표	☐ Feature extraction 완료			

- 사수님께 질문 : RMS도 알고 mean도 알고 normalization도 아는데, normalizating the mean RMS는 뭔가요?
- 내 깃허브 주소

- https://github.com/Hyedora/2020_Summer_Individual_study.git

- https://github.com/Hyedora

Order	category	To-do	progress	Start	Due	Done	Done
1	Signal Preprocessing	Apply butterworth band-pass filter	Done			2주차	Jul 21, 2020
2	Segmentation Data processing	Divide continuous data into 150 samples window	Done			2주차	Jul 21, 2020
3	Segmentation Data processing	Discard useless data : 192ch → 168ch	Done			2주차	Jul 22, 2020
4	Segmentation Data processing	Compute RMS for each channel	Done			2주차	Jul 22, 2020
5	Segmentation Data processing	Perform baseline normalization	Done	Jul 23, 2020	2주차	2주차	Jul 24, 2020
6	Segmentation Data processing	Check whether each window is represented by a 168-dimensional vector of RMS values	Done	Jul 23, 2020	2주차	2주차	Jul 24, 2020
7	Segmentation Data processing	Apply spatial order 3 1-dimensional median filter on the vector to compensate local artifacts	Done	Jul 28, 2020	3주차	3주차	Jul 28, 2020
8	Segmentation Determine whether ACTIVE	Compute average of the summarized RMS values per window → threshold	Done	Jul 28, 2020	3주차	3주차	Jul 28, 2020
9	Segmentation Determine whether ACTIVE	If the sum of RMS vector elements of one window is greater than the threshold, it's ACTIVE	Done	Jul 28, 2020	3주차	3주차	Jul 28, 2020
10	Segmentation Determine whether ACTIVE	If the predecessor and successor is active, it's ACTIVE	Done	Jul 28, 2020	3주차	3주차	Jul 28, 2020
	Debugging	Check whether it's well operating until now	Done	Jul 28, 2020	3주차	3주차	Aug 1, 2020
	Segmentation	Select the longest contiguous sequence of active windows → gesture segment	Done	Jul 30, 2020	3주차	3주차	Aug 1, 2020
11	Feature Extraction	compute RMS for each channel on all windows → feature (of each channel)	Not understanded		3주차		
12	Feature Extraction	Normalize the mean RMS over all channels	Not understanded		3주차		
13	Feature Extraction	Result : 168 * N dimensional feature RMS vector. With RMS is length normalized			3주차		
14	Naive Bayes classifier	Model the feature distribution by kernel density estimation with Gaussian kernel function			3주차		
15	Naive Bayes classifier	Apply naive Bayes classifier for each 27 classes			3주차		